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The Shared-Time Concept project was one of several projects conducted under a grant for a developmental vocational education research and teacher education program based on a clinical school concept. The objectives were (1) to determine the extent and nature of use of shared-time concept for conducting vocational education programs, and (2) to develop some administrative guides for establishing shared-time programs. Three kinds of activities were conducted during the course of the project: (1) data gathering and analyzing, (2) leadership development activities, and (3) dissemination activities. This document is the first of a four-part series and contains three papers: (1) Community Factors Related to Shared-Time Concept for Area Vocational Education Programs, (2) Aspirations for Education and Occupations: A Factor to Consider When Planning Area Vocational Education Programs, and (3) Manpower Demand Factors for Development of Vocational Education Programs. Other publications in this series are Considerations for Curriculum Development (VT 008 392), Practices and Procedures, (VT 008 389), and Financing and Administering Area Programs (VT 008 391). A final report of this study is available as ED 019 513. (MM)

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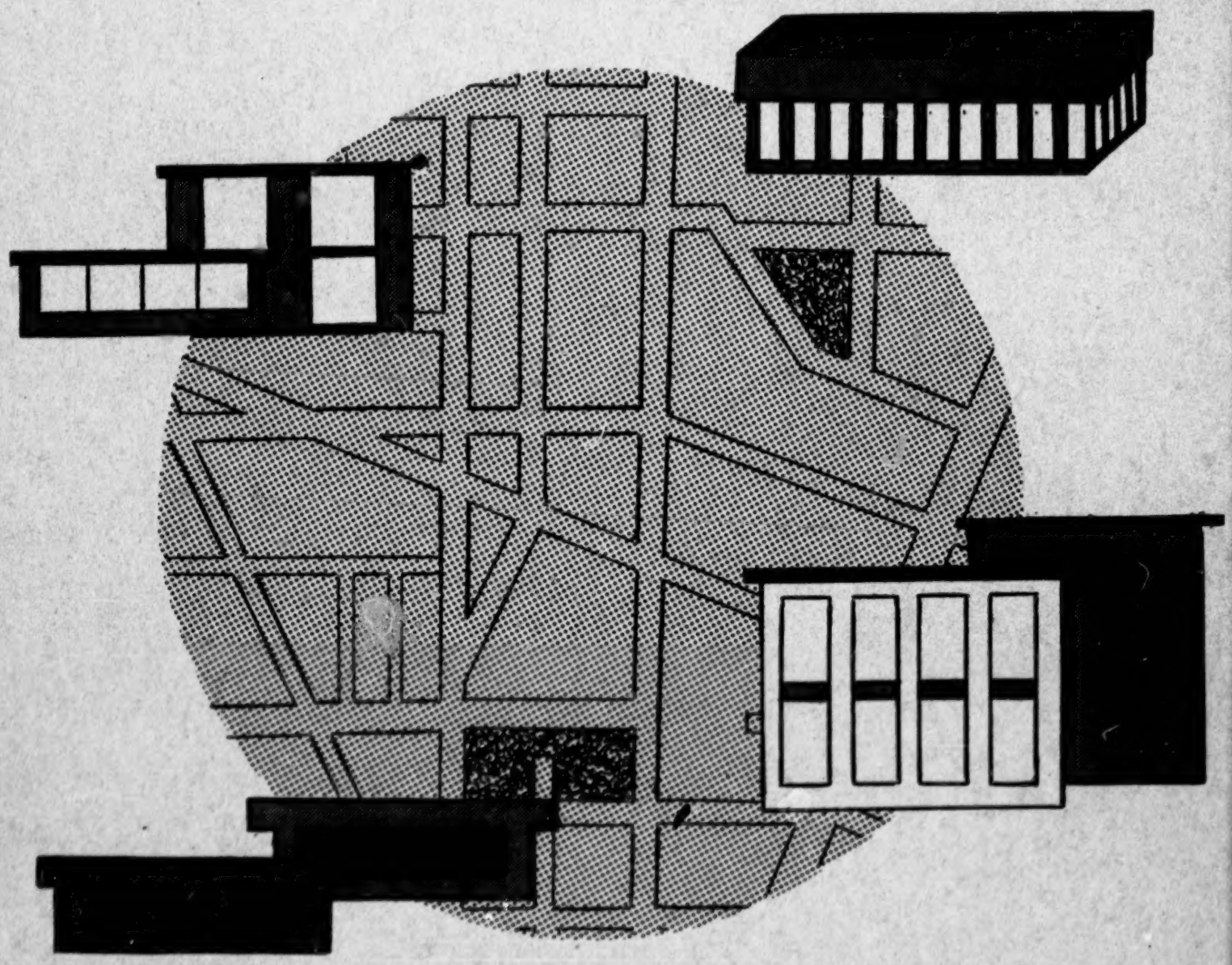

Shared-Time Concept for Area Vocational Education Programs

•community factors

Part 1 of a Four-Part Series

Department of Secondary Education and Curriculum
College of Education
Michigan State University
East Lansing, Michigan

VT008390

RESEARCH & DEVELOPMENT PROGRAM
In Vocational-Technical Education

Project Report No. 1

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Part 1 of a Four-Part Series

SHARED-TIME CONCEPT FOR AREA VOCATIONAL EDUCATION PROGRAMS

• COMMUNITY FACTORS

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Department of Secondary Education and Curriculum,
College of Education
Michigan State University
East Lansing

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FOREWORD

"Shared-time" is a familiar concept in education. Between a number of public and private schools throughout the nation there are some cooperative arrangements whereby facilities for specialized education programs are "shared." Students in such participating schools have as it were "dual enrollment," but at the same time maintain their identity with the "home" school. The objectives of the "shared-time" project are: (1) to survey the existing shared-time programs with specific reference to "vocational" education, (2) to develop working principles for such programs, and (3) to disseminate information concerning the programs.

In pursuance of the latter objectives summer workshops are conducted. To these are invited persons recognized for their competence in fields related to general and vocational education. Some of these participants are currently engaged in the organization and administration of "shared-time" programs for vocational education. Thus, the workshops provide opportunities for sharing rich ideas and valuable experiences.

It is part of the design of the project to publish from time to time the reports of these workshops and conferences.

Two such workshops have been held, one in the summer, 1966, and one in the summer, 1967. This present publication in one of a series of four based on some of the addresses and discussions from these meetings, and on papers specially written by the project leader, and others. The series includes:

1. Community Factors
2. Considerations for Curriculum Development
3. Practices and Procedures
4. Financing and Administering Area Programs

Undoubtedly there are problems in the organization and administration of shared-time programs in vocational education. But these problems are not insurmountable. It appears that the advantages far outweigh the difficulties. The following pages will show that such programs form one of the most effective schemes for providing "comprehensive" education for the modern high school youth. For the rural district, the shared-time concept is particularly appropriate.

Our thanks is extended to the individuals who have shared with us their ideas and experiences. We trust that those that have adopted the scheme and those that plan to experiment with it will gain from a perusal of these pages.

O. Donald Meaders
Abel Ekpo-ufot

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INTRODUCTION

The many changes in the nature of jobs, the mobility of people, the number of young people graduating from high schools and other changes have caused community leaders to give more attention to the public education program within their area. Much, but not all, of this attention has been focused on what the schools are doing to prepare youth for the world of work.

One of the approaches for improving vocational education frequently cited by educators and others is for two or more schools to jointly offer such programs. The small size, or limited number of students in a single school, is often mentioned as a major reason for not offering more vocational education in any given school system. The high cost of the equipment and laboratory space, lower pupil-teacher ratio, and scarcity of qualified teachers are all identified as reasons for not expanding the offerings of vocational education in the individual schools.

However, the concept of having two or more schools share the cost of providing the facilities, equipment and staff, in addition to making the instructional program available to interested students from all cooperating schools has much support among laymen, professional educators and businessmen. The concept is frequently referred to through the use of such phrases as "area vocational education program," "area vocational school," and "shared-time vocational education programs." Often the phrases are used interchangeably, even though there may be some fundamental differences among them.

This publication is one of a series of four which attempt to deal in depth with various aspects of the shared-time concept for expanding and extending vocational education programs.

The shared-time concept rests firmly on the joint efforts, cooperative efforts, of two or more schools to provide an educational program. In this case, the educational program being considered is vocational education. Although there are many factors to consider such as legal limitations to cooperative or shared ventures, the focus in this publication is on the community factors. Some of these community factors have been identified as values, sentiments, and attitudes of the people.

The image of vocational education held by the people in the community and the importance of vocational education as they perceive it have been mentioned by Lowry (see the following paper "Community Factors Related to Shared-Time Concept for Area Vocational Education Programs") as manifestations of the most fundamental community factors to be taken into consideration. Other factors included by Lowry for consideration are (1) resources and (2) the decision-making process.

Two other papers in this publication deal in depth with parts of two community factors: (1) aspirations of the people for education and

occupations, and (2) manpower demand factors. Some methods of assessing and using the aspirations of people in the given communities for occupational education have been presented in the second paper. Data from aspiration studies conducted in more than fifty rural Michigan communities have been used to illustrate ways of measuring and using such data for planning area vocational education programs.

The final paper deals with manpower demand factors. The concepts and data presented are based, primarily, on the Michigan Manpower Study. Relationships between the nature of the labor force, labor force forecasting, and educational planning are presented and discussed.

O. Donald Meaders

COMMUNITY FACTORS RELATED TO SHARED-TIME CONCEPT FOR AREA VOCATIONAL EDUCATION PROGRAMS*

THE IMAGE OF VOCATIONAL EDUCATION

The values, sentiments, and attitudes of the people are among the most fundamental community factors that must be taken into account in the development of any educational program in a community. A basic problem related to vocational education in general (not just the shared-time concept) is the image which many people of our communities have of vocational education itself. This includes parents, teachers, students, community leaders, and the public generally.

Obviously, the image people have varies greatly from one community to another, from one neighborhood or one school district to another. In some instances, a four-year college program is equated with success, while anything less than or different from a college degree is given little consideration and holds a very poor image in the minds of many people. At the other extreme, questions are being raised in some school districts as to whether or not every student at the high school level should take some form of course work in vocational education. In many communities, there is a basic conflict between so-called "general" education and "vocational" education. In many instances, vocational education has become equated with education for the "dull," the "handicapped," those who are "economically deprived," for the potential "dropout," or the rejects from the academic disciplines. (As a matter of fact, such references were alluded to in the conference conducted last year.) The very terminology of "occupation" implies a different connotation from that of "profession," and there is no problem determining which term carries the higher prestige in our current society. Certainly the image of vocational education that is held by people in the power structure -- those who make, facilitate, or block decisions, and those who handle and decide financial affairs of the community -- has an impact on the development of vocational education, whether shared-time programs or otherwise. This point is important because some shared-time programs have rough sledding, not because of the shared-time concept but more particularly because of the attitudes toward vocational education in general.

Since the panic of the sputnik we have been led to believe that anyone who did not go through college was some sort of dead-head, dropout,

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* Sheldon G. Lowry, Professor of Sociology, Michigan State University

or other category of second class citizen. However, I am not convinced that everyone ought to go to college -- not even all of those who have the mental capability. But, it has become a stigma not to go to college -- and this trend is increasing. This image, in my opinion, must be changed. As a first step in that direction, I propose that careful consideration be given to a change in the name, vocational education, which is charged with a symbolism that is not likely to be outlived. Does the terminology, vocational education, mean to imply that this is the only education that prepares one for the "world of work" -- and that it is, therefore, devoid of all subject matter not directly work related. It has been suggested that every upper level secondary student needs to visualize his school day and his school year as a work schedule in and of itself, rather than simply as the preparation for the world of work.

Another way of altering the image is to show the vocational implications and applications of every subject -- whether it be history, English, mathematics, or other disciplines Furthermore, it would be a little more difficult but not impossible to demonstrate the aesthetic, avocational, as well as the occupational contributions of various disciplines, including those traditionally thought to be entirely vocational in nature.

Many schools are developing new approaches to the whole concept of the work-study program. These developments reflect not just economic pressures but a rather genuine concern for youth to understand the world of work which, in turn, may very well enhance the learning process in the more traditional subjects.

As these changes are brought about, it is not inconceivable that the marked distinction between what we now call "vocational" education and "general" education will disappear and we may even begin to talk about "shared-time" in other fields such as music, art, mathematics, and others. For example, had my daughter had the opportunity to take part in a shared-time program in music, her talents could have been developed to a degree commensurate with her abilities and aspirations. There is as much justification for this kind of shared-time approach as there is for "occupational" training.

My basic point is that we are making too much of a distinction between occupational and other kinds of educational programs. I am suggesting that we need a long-range, careful examination of our philosophy of education and the distinctions being made between these two aspects of education.

Demonstrated Need

Perhaps one of the most important community factors to be considered in a shared-time program is demonstrated need. I have underscored "demonstrated," because I am convinced that the people of our communities will find the way to obtain a program they feel is vital to the community.

Obviously, need can be demonstrated only after careful study and analysis -- which I understand has been taking place throughout the State of Michigan. However, the word "demonstrated" carries a connotation beyond simply obtaining the information. It is not enough that you know and that I know -- the need must be demonstrated to the people of the community, and particularly the key leaders of the community. They must be convinced within their own minds

Potential Participants

There must be a need as far as the potential participants are concerned. Simply stated, there must be individuals with an interest in and aptitudes for participation in the program.

Market

There must be a need for the skills which will be produced. The magnitude of the program may need to be designed to fit local community needs with flexibility for expansion or contraction as the need arises. However, every community regardless of size, has been and will continue to be affected by population movements, regardless of whether the flow is in or out. Such a continuing movement has tremendous importance for every region as well as the population as a whole. Migration and mobility patterns for the local community situation must be studied very carefully. Many studies have shown that many older workers are less mobile and their patterns of migration are somewhat different from those of the younger workers. Certainly these factors must be considered in shared-time programs and in curriculum development generally. It would be a fallacy, from an education point of view, to assume that training should be oriented only to the local community situation. This means that some attention may need to be given to the need for migration to other localities. There are many communities, small and large, which must give training to the local people for local jobs but on the other hand, students must be helped to recognize that to obtain jobs many individuals must be trained for regional and national markets, because the opportunities will not be sufficient at the local level.

National Bookkeeping System

On the broader level, if one considers the rapid mobility of the population (1 in 5 families change residence each year) and the rapidly changing occupational structure with the advent of automation, it becomes clear that somebody must begin to do some national bookkeeping with regard to the end products and needs of vocational education. For example, there is a significant decline in farming but a marked increase in "agribusiness" -- businesses related to agriculture. There is a shift from manufacturing to service occupations such as health, safety, sanitation, education, community services, and others. The magnitude of the shift is clearly reflected in the fact that only a short time ago the majority of the jobs were in production. Today, according to many recent reports, the service occupations constitute 60 percent of the jobs, and the estimates are that this percentage will rise to 80 percent by 1980. With the recent rapid developments in vocational education, the increases in facilities, services, and finances it is quite possible that we will overproduce many kinds of skills and underproduce others. If, for example, every training center produced welders we would have welders running out of our proverbial ears. Obviously, this says something about the need for long-range flexibility in our programs.

Female Workers

Another factor of importance is the increasing number of female workers, both married and single. A shared-time program which does not take this into consideration may be overlooking one of its primary needs and primary sources of support.

RESOURCES

Closely associated with demonstrating the need, is the necessity to demonstrate that the resources are or can be made available.

Social-Psychological Climate

One of the important resources is a proper social-psychological climate within which such a program can be developed. This aspect will be discussed in greater detail later.

Ecological Feasibility

The ecological feasibility -- that is the physical locality, distance, arrangement, traffic, and accessibility -- is a major factor and an important resource for the proper development of shared-time programs. Obviously, some localities are in much better shape than others in this regard.

Transportation Facilities

Closely related to ecological feasibility is transportation facilities. This resource has constituted a major stumbling block in some communities. In fact, at times it has been serious enough to keep some students from participating in the program. However, in most instances the problems are not insurrmountable if taken into consideration from the very beginning. I should also add that transportation problems these days often are more likely to be psychological than physical.

Financial Backing

Financing this kind of program, particularly when it cuts across school districts, can pose some real headaches for which there are no easy solutions. The whole economic situation and the potential for developing the educational plant and facilities and hiring competent personnel are important considerations.

The situation is complicated by the fact that certain courses may be harder to finance than others. Also, one school may have higher demands on the faculty and facilities than other participating schools.

Personnel

One of the resources necessary for any community program is qualified personnel. Time and time again we see programs falter or fail because of lack of leadership and supporting personnel. Furthermore, it has been my observation that programs that are really "off the ground" have at least one key person that I refer to as a "spark plug." These individuals are not only self-starters themselves, but they ignite enthusiasm in others. The more successful of such individuals usually have a vision of the program that far exceeds that which can be accomplished. Their foresight, their dedication, and their enthusiasm keep the program moving forward, while others are faltering and on the defensive constantly trying to justify their existence.

Testing, Counselling, Placement

A very vital link in the whole program is the services available in the community (whether within the school system or elsewhere) for adequate testing, counselling, and placement. While these services are being improved over the years, there are marked variations in adequacy from one school to another and from one community to another. On the whole, they are miserably inadequate. Our tests still lack high predictability.

Another thing that confronts us is that this either-or attitude between general education and vocational education leaves little opportunity for the student to change his curriculum as his interests change, as his potentialities are developed, and as he begins to "find himself." We do not have sufficient mechanisms for him to alter his course of action or even for him to see that it needs to be altered.

Our counselling is too often done by the coach, the band leader, the shop teacher (figuratively speaking, that is,) -- someone who has more free time than another but who is not trained for the job. It is an unusual school which has a real top-notch counselor who can interpret tests, know what they mean, and who can understand the problems related to vocational training, occupational training, and academic training. Our placement service, while markedly improved in recent years, leaves much to be desired when it comes to matching personnel skills with job requirements.

SOCIAL-PSYCHOLOGICAL CLIMATE

I have indicated elsewhere that the values, sentiments, and attitudes of the people are among the most fundamental community factors that must be taken into account in the development of community programs. Perhaps these factors can be subsumed under the heading of "social-psychological climate." These are factors which are important in determining interest in and support for a shared-time program. There are several factors related to "climate" which I should like to discuss.

Systemic Linkage

One of the basic problems concerning shared-time programs is a matter which Professor Charles P. Loomis at Michigan State University has called "systemic linkage." This simply means the articulation or

working together of two or more social systems or institutions. The problem we face is to overcome what Professor Loomis calls "boundary maintenance." Every group, every institution, every social system is continuously protecting its own identity and maintaining the loyalty of its members to that group as opposed to other groups. In schools, for example, long hours are spent developing esprit de corps. There are few places where it is more marked than in many of our educational groups. There are school colors, flags, pins, rings, special insignia, fight songs, and competitive games. In many ways we seek to outdo, overcome, and to excel the opponent. All of these things identify this particular institution as opposed to others. The boundaries between them are clearly defined and protected.

Now we are asked to cooperate with our enemies in something more than what amounts to peaceful coexistence. The real challenge, then, is to develop among the various individuals and groups a kind of cooperative effort in which each individual and institution maintains its own identity without threatening the integrity and autonomy of the other. Therefore, we must first develop and maintain adequate communication. We must develop a mutual trust. We must demonstrate that we have some common concerns. And we must show clearly the mutual benefits of cooperative effort.

Past patterns of organizational cooperation in our communities may serve to facilitate or they may serve to hinder the systemic linkage. It is a very real problem and one of the most difficult we face. Men's reputation, their status, and perhaps their jobs are often at stake.

Time Orientations

The "time orientation" of the community is of tremendous importance to the development of vocational education. Irwin Sanders in his book, The Community, states that, "all communities are concerned with the past and the present and the future but they differ in the importance accorded to each." It is essentially this old matter of inertia. Dr. Sanders indicates that many people tend to stress the past, be complacent and take more pride in what their ancestors have done than what they have done themselves. They tend to resist change and stress conformity and tend to stress it almost as an end in itself. On the other hand, many American communities are future-oriented. Of course, this is all a matter of degree, because there are many variations in the time-orientation of the people even within a single community.

I would assume that if a community is future oriented there would be a great deal more stress placed on increasing the level of living, and of enhancing the development of each individual. Therefore, new

opportunities for education would be accepted more readily. It is obvious that in those schools or communities in which the reverse is true new educational programs are likely to have difficulties until these attitudes are changed. I would suspect that this is particularly true in our changing rural communities. The past orientation is still very strong. Each of us could cite examples of people in these past-oriented communities who say that "My father or grandfather had 3-4 years of formal education and it was certainly sufficient for him. He didn't need all of this vocational education stuff, and I don't see why the kids should waste their time with it today."

This is an important dimension in community analysis which must be taken into account in vocational education.

Space Orientations

Each community may also be analyzed in terms of what we might call the space orientation of the people. This orientation may be considered as a continuum ranging from more localistic to more cosmopolitan orientation. The basic idea here is that if the space orientation is largely localistic, the orientation of the people will be relatively narrow in scope and they will relate primarily to their own neighborhood, their own locality, or their own school. On the other hand, if the space orientation is largely cosmopolitan, the orientation will be broad in scope, and the people will relate more readily to other communities, to other schools, and other institutions. If the orientation is localistic, questions will be raised concerning the need for preparation for jobs which do not exist in the local community. If it is cosmopolitan, such questions are not as likely to be raised and support will be gained for training which will permit the individual to move into the larger society.

In developing a shared-time program, these orientations must be dealt with and, at times, modified through proper education. Furthermore, basic decisions must be made as to whether the training will be oriented to the local community, to the larger metropolitan area, to the region, or to the national market or some combination of these. However this is not an either-or proposition in its totality. There are some aspects of vocational education which can be oriented almost entirely to the local community. For example because of the relatively narrow range of migration of adult farmers, vocational education in the productive aspects of vocational agriculture can be oriented almost entirely to the local situation. On the other hand, there are other aspects and phases of vocational education which must be oriented to the national market rather than to some local or intermediate level. This is true because of the heavy rate of mobility and migration in American society. Americans are on the move across the nation. High rates of geographic mobility are associated with a dynamic economy in an affluent society.

Cross-Generational Conflict

Another important factor in the social-psychological climate is the cross-generational conflict -- that conflict that often arises between the aspirations of parents for their children and the aspirations of the children themselves. The parents may have their heart set on the child going into one of the more prestigeful positions, while a child may have other goals in mind. Or it could be just the reverse of this. Many examples could be cited, but I am sure you can supply your own. Quite often either the parents or the child or both have aspirations which are far too high for the capabilities of the students, and I am not talking about vocational vs. non-vocational. I think we too often get into this rut. We too often say, "Well he's not qualified for this so we'll put him into vocational school." There are many individuals who are not qualified to go into certain kinds of vocational training. I think the distinctions we make are false and I think we ought to find some way of eradicating them.

In any event, the conflict that often arises between parents and children must be recognized and dealt with. The channels of communication must be opened and kept open with adequate and appropriate information and counselling. Needless to say, different schools often have a disproportionate number of such conflicts which could create problems for shared-time programs.

Attitudes Toward Certain Occupations

While attitudes toward certain kinds of training and certain occupations are not necessarily the most important factor, this factor alone can be instrumental in making or breaking a shared-time program. There are certain stereotypes about certain kinds of jobs which are very difficult to overcome. One's job is associated with particular levels of the class structure, and both of these are associated with the worth of the individual -- both in his own eyes and in the eyes of others. Furthermore, certain minority groups have become associated over the years with certain occupations which immediately labels these occupations as undesirable. All of these attitudes must be taken into account, particularly where educational programs cut across class lines and involve different minority groups. The problems are not insurrmountable, but they do not go away by wishing they weren't there.

THE DECISION-MAKING PROCESS

The development of a shared-time program is basically a problem of community decision-making. There are two basic patterns: one is manipulative and the other is problem solving. (See following chart.)

Manipulative decision-making is autocratic and dictatorial. A person or group simply says "this is what we are going to do." Now in terms of making a decision, this pattern may not take much time. However, in a democratic society if the people are not convinced, implementation may extend over a long period of time and, in fact, may never be accomplished.

The problem solving pattern recognizes that if you want group action you must have group decision -- the people must become committed to the program. This method places more emphasis on the planning and decision-making. The program is soundly based, the key people are involved, everyone is kept informed, and once the decision is made everyone is committed and understands that this is the thing to do. They have been involved in the decision and have a vested interest in seeing the program succeed. Therefore, implementation will take place with greater facility and with greater success. In the long run you save time, frustration, and possible failure.

If you are interested only in making a decision you can do this quickly with the manipulative method. But if you are interested in implementation, you might better spend more time on the study, planning, and decision-making phase.

There are several essential stages in the problem solving process. These are illustrated in the following chart.

Decision-Making Process

Manipulative

Decision → Implementation →

Problem-Solving

Decision → Implementation →

One further point: decision-making is only one aspect of a broader model for community action programs. This model consists of five major phases. I have attached a brief summary of these phases which are essential to successful community action programs. (see pp. 14 & 15)

Before leaving this subject I should like to illustrate the importance of these vital processes in community action programs. At the conference last year, a film entitled "No Room at the Bottom" was shown. It presented the program in St. Louis County, Missouri which involved the voluntary cooperative efforts of 25 school districts to jointly provide for vocational education, special educational, and other educational services. Literally thousands of dollars went into the preparation of that film, and we were told of the tremendous amount of wasted film that had to be shot in order to get exactly what was wanted. But when the end product came, the planning was there, the program was there, and the reaction was positive. When this film was shown, <u>action</u> resulted.

If we learned anything from this film, we learned that preparation must preceed action, and you can afford to spend 2, 3, or 4 times as much effort in the study and planning stages and in getting set for implementation. Also, we learned the importance of proper timing. It was not must by chance, for example, that this film was released when it was released.

Take the Cleveland area as another example. The TV station over in Cleveland for 1½ or 2 years anticipated the poverty program. Perhaps it was because Mr. Celebreze comes from Cleveland and he was in on what was going on in Washington. Nevertheless, this television station financed a complete analysis of the poverty situation in Northeastern Ohio surrounding the Cleveland area. When the poverty program was announced they were ready, and they had their documentary film ready to go. They invited something like 2,000 people to a large, ballroom banquet. They brought in some of the key figures involved in the poverty program at the national level and had them speak. Then they put on their documentary film. It was all broadcast on television. All of the news media were invited as special guests to the banquet and to the live broadcast. This program was planned and was timed perfectly. It was not happenstance, it was not chance. They looked ahead, and when the proper moment came they put this program on, and you can be sure they are getting their share of the poverty dollars that are being doled out of Washington.

Note: The following are two models suggested by the author for consideration when planning for use of the shared-time concept in area vocational education programs.

A Model for Planning and Decision Making

Objective

To describe the decision-making process as a systematic procedure for working out solutions to problems.

Groups may be looked upon as decision-making, task-accomplishing, or problem-solving mechanisms. Each of the activities of the various members may be analyzed or interpreted in terms of its contribution toward the solution of the problem which confronts the group.

For purposes of analysis, the decision-making process may be divided into six major steps or stages. Although these stages are presented as a logical sequence, they do not necessarily follow a rigid sequence.

1. Define the Problem (or the situation which calls for a solution).

   Define the problem at hand in the most simple terms possible. Be sure it is understood by everyone involved. This is the first and one of the most important steps in solving a problem.

2. Collect the Significant Facts About the Problem.

   Collect all the pertinent information available on the problem. Facts are more valuable than just opinions. Involve the appropriate persons and groups in supplying the facts. Consult others, including experts when necessary, in order to get a complete and accurate picture.

3. List ALL of the POSSIBLE Solutions or Courses of Action.

   Simply LIST all of the possible solutions or courses of action. Do not evaluate solutions until all are listed.

4. Evaluate the Alternative Solutions and Set Priorities.

   Go back over the list. Examine and evaluate each of the alternative solutions. Estimate the possible consequences of each. Explore these courses of action in terms of their advantages and disadvantages. Test the possible solutions in terms of experience. Seek intergrative solutions rather than compromise.

   Then begin to set priorities. Eliminate the most unlikely choices, and reduce the alternatives to the most likely choices.

5. Make a Decision.

   On the basis of the above considerations, select the most desirable action. At this point, a decision usually can be made through an expression of consensus.

6. Take Action -- Carry Out the Decision.

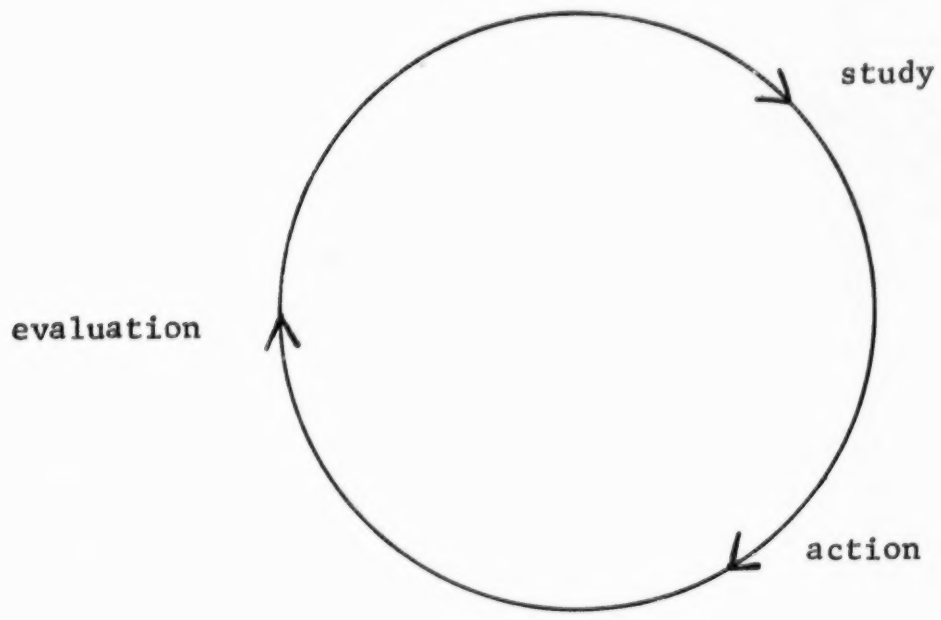
   Spell out the tasks and responsibilities that need to be fulfilled. Indicate the steps that are to be taken. Designate who is to do what. Proceed with the task.

7. Evaluate the Action

   Evaluate systematically major decisions in terms of their results. Indicate what changes are needed to do a more effective job.

8. Every Action Usually Leads to Further Action

   Therefore, the process becomes circular, recognizing that the above steps do not follow a rigid sequence.



For an annotated list of references on decision-making, see:

Paul Wasserman and Fred S. Silander, Decision Making: An Annotated Bibliography. Ithaca, New York: Graduate School of Business and Public Administration, Cornell University, Price $3.50.

The contents follow:

I The decision making process -- general and theoretical material
II Values and ethical considerations in decision-making
III Leadership as a factor in decision-making
IV Psychological factors in decision-making
V Decision-making in small groups
VI Community decision-making
VII Communications and information handling
VIII Mathematics and statistics in decision-making

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The Community Development Process: A Model for Community Action

Objectives

To review the process of community development as a series of overlapping stages.

Community development (or community action) can be regarded as a process of planned change. The process can be viewed as a series of overlapping stages. Obviously, the stages do not occur in a well-defined sequence. They are separated only for purposes of analysis.

Action Stages

1. Convergence of Interest.

   At this beginning stage, there is a convergence of interests of persons about a given situation, problem, or condition. Such persons need not have identical motives behind their interest in the situation; nevertheless, their interests converge on the same concern.

2. Establishing an Initiating Set or Group.

   Through the convergence of interests, a group is established which is resolved to initiate action. This group begins to:

   a. Identify needs or problems.
   b. Determine goals and objectives (at least preliminary goals).
   c. List alternative approaches or means to achieve the goals.
   d. Determine resources (both inside and outside the community) available to meet the goals.

   The initiating set must include those persons who have a right to initiate and those who have the obligation to respond. This relationship provides a basis for them to work toward common goals.

3. Legitimation and Sponsorship.

   The goals (or "charter") of the initiating group must become acceptable to the individuals and social systems which need

to be involved in order to achieve the goals. In other words, the right to initiate action must be legitimatized or approved.

In some instances, because of the nature or the composition of the initiating group, these rights may be contained within the group itself. Generally, access must be obtained to various groups or influential persons whose sponsorship or approval is necessary before action can take place and before support can be gained from the remainder of the community. Because of their position, these persons and groups legitimize action. They make it "rightful" in the eyes of the community.

4. Establishment of the Execution Set (Action or Execution).

The establishment of this group is analogous to the establishment of the initiating set. Of course, the members may be the same in both instances.

As the initiation set must define the charter (the goals), so the execution set must accept it. Obviously, the charter may be accepted at times out of obligation to the relationships of the persons involved and not for the sake of the charter itself.

Establishment of the execution set requires that access be obtained to the resources -- both human and non-human, and both inside and outside -- of the community.

5. Evaluation.

This stage is one that is often neglected. It involves an assessment of the consequences of the decisions that have been made and the actions that have taken place. This stage involves the evaluation of progress toward the goals. It also includes the outlining of appropriate modifications in the program where advisable in light of the evaluation.

The five stages of the community development process can be summarized rather simply as follows:

Stage one . . . . . Study
Stage two . . . . . Planning
Stage three . . . . . Organizing
Stage four. . . . . Taking action
Stage five. . . . . Evaluation

Readings

The above model is based primarily upon:

Christopher Sower, John Holland, Kenneth Tiedke, and Walter Freeman, Community Involvement. Glencoe: The Free Press, 1957.

For additional readings, see:

Warren G. Bennis, Kenneth D. Benne, and Robert Chin (eds.) The Planning of Change. New York: Holt, Rinehart, and Winston, 1962.

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ASPIRATIONS FOR EDUCATION AND OCCUPATIONS: A FACTOR TO CONSIDER WHEN PLANNING AREA VOCATIONAL EDUCATION PROGRAMS*

> Throughout the country...new and expanded vocational education programs will soon be underway, bringing job training for Americans into harmony with the industrial, economic, and social realities of our day.
>
> --Francis Keppel

INTRODUCTION

During recent years, especially since passage of the Vocational Education Act of 1963, there has been much talk about the development of new and expanded vocational education programs. Much of the discussion has focused on the development of area vocational education programs as a means of making vocational education available to students in all communities.

In Michigan the discussion has centered around the use of the shared-time concept as a means of developing the area vocational education programs. In general, this has meant the development of cooperative arrangements between and among high schools, and in some areas with community colleges, for the purpose of providing a more comprehensive vocational education program than could be provided by any of the high schools operating independently. This type of arrangement has also involved public and non-public school cooperation.

Although many questions have been raised, and many meetings held to discuss the development of area vocational education programs in Michigan, the major emphasis has been on such items as finance,

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transportation, administration, legal alternatives, labor market trends and others. The least discussed, but perhaps some of the most important factors are those referred to as COMMUNITY FACTORS.

The aspirations of people for education and occupations represent one aspect of the community factors to consider. The central focus of this report is placed on measuring and using the aspirations of people for education and occupations when planning area vocational education programs.

ASPIRATIONS FOR OCCUPATIONS AND EDUCATION

In our American society there is a high degree of free choice for career selection. These occupational choices, as part of career planning, are important to both the individual and society. A person's occupation affects achievement of his goals in life: his family life, income, leisure time, social relationships, daily decision making, health, retirement and others. For society, the youth represent the future for the communities, states and nation. When youth fail to assess their own interests and abilities adequately in relation to occupational opportunities, and when appropriate educational programs are not available there are at least three kinds of losses likely to occur (1:5):

--Losses in productivity of the economy due to poorly trained persons,

--Losses from unemployment and underemployment,

--Losses which come from dissatisfaction among persons in their present jobs.

The aspirations of youth for education and occupations are thought to be particularly critical to occupational attainment. Many theories, or partial theories, of occupational attainment have been advanced which provide a basis for using the aspirations of youth as a factor to consider when planning for area vocational education programs. Kuvlesky and Pelham (2) have reviewed much of the published research literature on "occupational status orientations of rural youth." Theories and empirical research seem to support the notion that (a) aspirations and expectations should be differentiated, (b) there are degrees of desire in reference to aspirations and degrees of certainty in reference to expectations, and (c) there are varying degrees of differences between aspirations and expectations.

Inferences from Research on Aspirations for Occupations and Education

The occupational and educational aspirations and attainments of youth are affected by many factors, some of which have been hypothesized to be community, place of residence, sex, race, intelligence, occupations of parents, marital relationships of parents, educational level attained by parents, religious background, ethnic background, school experiences, work experiences, friends, and others. Burchinal (1:24-25) has summarized the results from many studies dealing with career choices of rural youth and has suggested seven inferences from the research findings:

1. The majority of rural youth must, by preference or necessity, move to urban areas in pursuit of adult careers.

2. Wide disparity frequently exists between occupational preferences or aspiration levels and available occupational opportunities.

3. Rural youth apparently are at a disadvantage when entering an urban labor market and competing with urban youth for available occupations.

4. Rural farm youth are frequently at a greater disadvantage than rural non-farm youth upon entering the urban labor market.

5. Plans to farm appear to have a strong negative influence on plans to attend college.

6. Occupational choices are based upon tentative occupational choices and arrived at by occupational role taking.

7. Rural youth from lower socioeconomic status families face special problems in occupational decision making.

OCCUPATIONAL ASPIRATIONS AND NEED FOR AREA VOCATIONAL EDUCATION PROGRAMS

Two major sets of factors should be considered when determining demand for area vocational education programs: the vocational development of individuals and the nature of the world of work. Frequently, very little attention seems to be given to the aspirations of youth for occupations as a major consideration. Instead, the readily available data about the nature of the labor force is brought into focus. For example, studies of need for vocational education usually attempt to measure the demand of employers (agriculture, business, industry, and government) for workers. Demand is then represented by the number of

new employees needed to fill vacancies created by promotions and other forms of job turn-over, and the numbers of persons needed to fill new positions created by expansion and/or change of the business or industry; and the number to be trained for up-grading and/or up-dating. The numbers needed now and anticipated for the future by employers in local, state and national areas frequently become the major dimensions of the demand model.

Another Dimension: Aspirations of Individuals

The aspirations of individuals constitutes another dimension to the demand model for vocational education. What people aspire to do and to become, regardless of where they are living or where their preferred employment might be located, is important. In other words vocational education should be available to youth and adults to the extent feasible, regardless of where they live. In addition, they should have an opportunity to prepare for the occupational area of their choice, not just for the occupations found in the local community.

The aspirations are important to consider because, first, such considerations reflect one of the major purposes of public education in the United States, and second, the aspirations give insights into planning the nature and scope of the educational programs to be provided.

Some of the implications of occupational aspirations of youth for area vocational education programs, are as follows:

1. Occupational Information

   The aspirations may reflect a need for more information about the occupations tentatively chosen and about other occupations in the world of work. The aspirations may indicate a need to provide occupational information to parents and others in the communities.

2. Career Planning

   The aspirations may reflect a need for more information about self as well as the requirements for entry and advancement in the chosen fields.

3. Courses of Study

   The aspirations may reflect the comprehensiveness of the total course offerings needed if the youth are to achieve a satisfactory level of vocational development before graduation from the school. The articulation of the high school program with post-high school programs becomes more obvious.

4. Flexibility of Schedules

The aspirations may indicate the need for exploratory experiences through a combination of courses as well as the need to provide a combination of experiences both in-school and out-of-school to achieve the desired vocational development.

AN EXAMPLE OF MEASURING ASPIRATIONS FOR OCCUPATIONS AND EDUCATION

The studies of need and feasibility for vocational education in Michigan have provided an excellent opportunity for field testing instruments designed to gather data about aspirations. Four such studies (3,4,5,6,) were conducted by teams of vocational teacher educators from Michigan State University. In addition, data from one additional study were available (7). Although many other data were gathered and analyzed, each of the five studies incorporated some measures of the aspirations of 11th grade students and their parents for occupations and education.

The Population

In each of the studies, the 11th grade students and their parents were selected as the group to be studied. The five separate studies involved 62 high schools with 4,784 students enrolled in the 11th grade. There were 55 public and seven non-public schools included in the studies. These were all of the public high schools* in twenty rural counties of Michigan as shown in Figure 1.

Questionnaires

Two questionnaires were developed for gathering data about aspirations in each of the studies. Most of the questions on the questionnaires to the students were identical from study to study, and most of the questions to the parents were identical from study to study. (Single copies of each questionnaire as used in one of the area studies are shown on pages 41 & 42 and 44 & 45.

The questions on the questionnaires were kept simple and few in number. Open-ended questions were used to secure information about (a) occupations of parents, (b) persons most influential for students' occupational choice, (c) curriculum preference in post-high school program, (d) willingness to work to earn money for tuition and other expenses, (e) preferences for location after high school graduation, and (f) attitude toward what is most important in a job.

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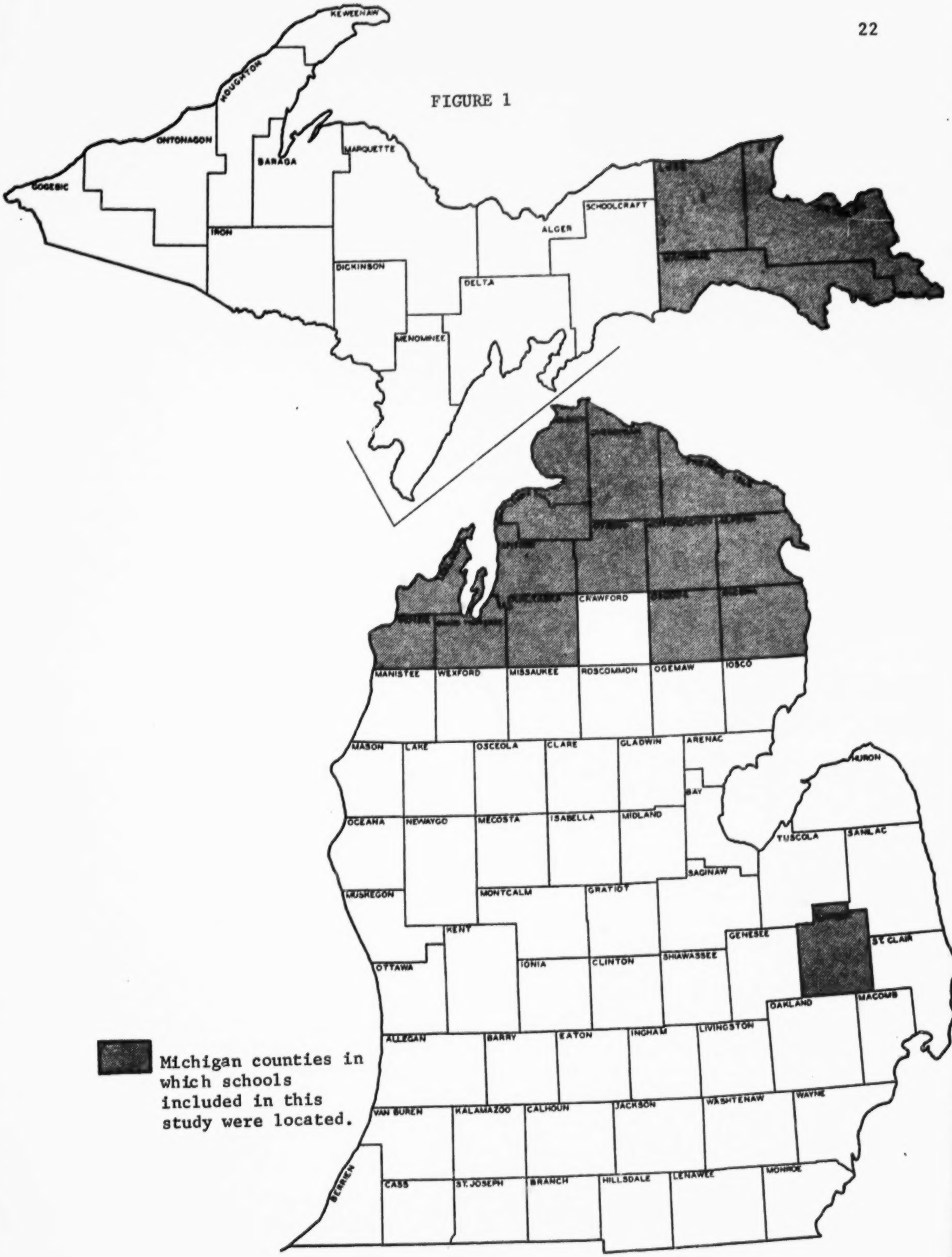
* One non-public school in one county was not included in the studies.

FIGURE 1



Michigan counties in which schools included in this study were located.

Collection of Data

The student questionnaires were administered by staff personnel at each school according to a set of instructions provided by the study team. The questionnaires for parents and a page of instructions were sent home with the students for completion by the parents. (Single copies of the sets of instructions as used in one of the area studies are shown on pages 39 & 40 and 43.

Processing the Data

The data from the questionnaires were coded for transfer to data-processing cards. Code numbers were assigned to schools but not to individual respondents. No attempt was made to match parent responses with the responses by their child. A coding key was developed for classifying the responses to each open-ended question as well as to assign card columns and column numbers to the responses to all questions. The classification of responses was designed to be most useful to the persons concerned with planning educational programs rather than for use by labor market economists or others concerned with economic models. In some instances the classifications commonly used by the Census Bureau and others were adapted.

The responses to the open-ended questions dealing with the occupations of the parents were classified into the following groups:

0 No Response

1 Professional, technical, managers, officials and proprietors and kindred (except farm)

2 White collar: clerical, sales and kindred

3 Blue collar: craftsmen, foremen, operators, mechanics, gas station attendant and kindred

4 Farming and forestry: farmers, farm managers, farm laborers, loggers, other forestry occupations and kindred

5 Agricultural non-farming occupations

6 Not in labor force: housewife, unemployed, disabled, retired and kindred

7 Deceased

8 Military

9 Miscellaneous, not elsewhere classified

The responses to the open-ended questions dealing with occupational aspirations and the kind of work experience were classified and coded according to the general pattern used in Project Talent (8). The four-digit code was then used to cluster the occupations into the following ten groups:

0 No Response

1 Agricultural occupations: farming, other production agriculture, and off-farm agricultural occupations including technical and professional positions.

2 Distributive occupations: marketing, distributing and merchandising positions at all levels including technical and professional positions.

3 Office occupations: secretarial, clerical, accounting and other office occupations at all levels including technical and professional positions.

4 Industrial occupations: manufacturing, construction, other trades, graphic arts, and service positions at all levels including technical, except professional.

5 Health occupations: nurse aides, practical nurse, registered nurse, orderly, technicians and professionals.

6 Food, clothing, and personal service occupations: food preparation, food service; clothing care, construction and service; other hospitality occupations; and at all levels (including teaching and other professional workers, except health service).

7 Engineering and other professional occupations not elsewhere classified

8 Teaching: all except those specifically designated in fields of agriculture, distribution, business, industrial, home economics and health.

9 Miscellaneous occupations not elsewhere classified.

The responses to the questions regarding hours worked per week and earnings per week were classified and coded as follows:

Hours per Week

0 No Response

1 10 or less

2 11-20

3 21-30

4 31 or more

Earnings per Week

0	No Response	5	$102.51 - $122.50
1	Less than $42.50	6	$122.51 - $142.50
2	$42.50 - $62.50	7	$142.51 - $162.50
3	$62.51 - $82.50	8	$162.51 - or more
4	$82.51 - $102.50	9	Other Response

Findings

Much information about the aspirations of youth and of the parents for their children was secured from use of the relatively simple questionnaire. The information secured and reported in this study is descriptive of the area, the respondents, and their aspirations for occupations and education. The data and their treatment do not permit establishing cause-effect relationships but seem to be quite useful for the purpose of helping to describe the clientele for educational programs designed to develop vocational competence.

General Background

The 55 public and seven non-public schools included in the study ranged in size (as measured by 11th grade enrollment) from 7 to 484 students, or an average of 77 students in the 11th grade. When considered on a basis of the enrollment in grades 9-12, the number of schools in each of three size categories was found to be:

Enrollment in Grades 9-12	Number of Schools
700 or more	6
400 - 699	8
Less than 400	48

All of the twenty counties were considered rural but with a large proportion of the population identified as rural non-farm. Only three of the counties (Grand Traverse, Leelanau, and Lapeer) have large dollar incomes from the sale of farm products other than forest products.

Responses were received from 83 percent of the 4784 11th graders and 49 percent of the parents (based on one reply from each family).

Occupations of the Parents

The fathers of most of the students were reported to be employed. Their employment was mainly in manual and service occupations (51%). About 18 percent were in professional, technical, managerial and kindred occupations and about 10 percent in farming or other agricultural occupations. In addition, the place of employment of most of the fathers (66%) was within the same county as the location of their high school.

Two out of five of the mothers were reported to be employed. Their employment was almost exclusively in three occupational groups identified as (a) professional, technical, managerial and kindred, (b) white collar, and (c) blue collar, in the ratio 2:4:4 respectively.

Education of Parents

The mothers had attained a slightly higher level of education than the fathers, although about eight percent of the 11th graders indicated they did not know how much education their parents had completed. The proportion of the parents reported to have various levels of education was as follows:

	Mother (%)	Father (%)
Not a high school graduate	34	42
Graduated from high school	38	25
Business or trade school	5	5
Some college	6	7
Graduated from college	7	8
Do not know how much education	7	9
No Response	4	5

Previous and Present Work Experience of 11th Graders

About four out of every five 11th graders reported they either had a job at the time they answered the questionnaire or had worked during the previous summer or both. The most frequently reported work experiences were as follows:

Kind of Work	Number Reporting
Farming, hired hand and other farm work	453
Baby-sitter	411
Waiter, waitress, carhop	314

Cont.

Kind of Work	Number Reporting
Salesclerk, cashier, grocery checker	228
Dishwasher, kitchen help, busboy	119
Maid in motel, hotel, home; housekeeper	94
Stock clerk, stock checking, inventory	67
Secretary, clerk-typist	51
Janitor	51
Yardman, gardening	45
Carpenter's helper	37
Electrical and mechanical repairs	33
Factory work	32
Painter's helper	27
Attendant at recreation center, park	26

When these work experiences were regrouped according to some of the occupational areas currently identified in vocational education the numbers in each area were as follows:

Occupational Group	Number Reporting
Agricultural occupations	578
Distributive occupations (excluding agricultural)	501
Home economics related occupations	1103
Food and beverage preparation & service	(513)
Clothing services	(24)
Personal, health and housekeeping services	(566)
Office occupations	82
Industrial occupations	229
General labor	360
Miscellaneous, n.e.c.	45
No Response	1066

The 11th graders indicated that their work experiences had been full-time during the previous summer (49%), occasionally (28%), and after school (18%). In general, their earnings were less than $42.50 per week, although some (about 1%) had earned approximately $100. per week.

Aspirations for Occupations

The 11th grade students were asked to indicate their first and second choices of occupations. In addition, on a separate questionnaire, the parents were asked to indicate their first choice occupation for their 11th graders. The boys most frequently reported first choices for industrial, and engineering and other professional occupations (n.e.c.), as shown in Table 1. The girls most frequently reported first choices for office, health and teaching occupations.

The 11th graders reported many more occupations than did their parents. The responses of the 11th graders were coded into 335 occupations while their parents' responses were coded into only 195 occupations. This appears to indicate the students have some knowledge about a wider range of occupations than do their parents. The parents tended to list the more traditional, well-known occupations. The most frequently reported occupational choices by the students and their parents were as follows:

First Choice Occupation	Percent 11th Graders (N=3964)	First Choice Occupation for 11th Graders	Percent Parents (N=2351)
Teacher	11	Teacher	11
Secretary, Typist Stenographer	10	Secretary, Typist Stenographer	8
Nurse	7	Nurse	7
Engineer	6	Business (not specified)	5
Hairdresser, Beautician	5	Engineer	4
Mechanic	4	Electricians, Electronic Tech.	3
Military Service (all branches)	3	Bookkeeper, Accountant, C.P.A.	3
Electrician, Electronic tech.	2	Medical Doctor	2
Social Worker	2	Farming	2
Farming	2	Industry	2
Conservation, Forestry, Extension	2	Draftsman	1
Bookkeeper, Accountant, C.P.A.	2	Mechanic	1
Policeman, Detective	2	Physical Scientist	1
Airplane Stewardess	1	Salesclerk, Salesman	1

Cont.

First Choice Occupation	Percent 11th Graders (N=3964)	First Choice Occupation for 11th Graders	Percent Parents (N-2351)
Specialist in fish, wildlife, etc.	1	Hairdresser, Beautician	1
Medical Doctor	1	Home economist	1
Draftsman	1	Architect	1
No Response	9	No Response	21

Many of the parents, although responding to other questions on the questionnaire, failed to respond to the question about their occupational aspirations for their 11th graders. In addition, there appeared to be a tendency for those parents who did respond to indicate more professional occupations that did the 11th graders.

TABLE 1

First Choice Occupational Choices of 11th Grade Boys and Girls Compared with Parents First Choices for Their 11th Graders

Occupational Group	Boys (N=1637)	Parents of Boys (N=640)	Girls (N=1495)	Parents of Girls (N=659)
	%	%	%	%
Agricultural Occupations	10.4	10.0	1.0	0.6
Distributive Occupations	4.5	5.3	2.9	6.5
Office Occupations	2.3	3.4	22.1	24.3
Industrial Occupations	27.5	25.0	0.5	1.4
Health Occupations	2.8	4.4	18.6	18.2
Food, Clothing and Personal Service Occupations	1.4	0.3	14.5	3.8
Teaching N.E.C.	6.7	4.4	16.0	17.6
Engineering and Other Professional Occupations N.E.C	20.4	14.8	8.1	4.4
Miscellaneous Occupations	13.3	2.0	8.9	2.4
No Response	10.8*	30.3	7.7	20.8

* Due to rounding the columns may not total 100 percent

Perhaps the aspirations of the 11th graders and their parents for occupations were conditioned, in part, by their attitudes regarding what is most important in a job. Both the students and their parents indicated "security" and "opportunity for advancement" were most important in a job as shown below:

What is Most Important in a Job?	Responses by: 11th Graders (N=3964) %	Parents (N=2351) %
Chance for advancement	33	58
Security	38	50
Nice working conditions	19	12
Being able to find a job locally	5	8
High pay	12	5
Prestige	2	1

The 11th grade boys indicated their fathers had greatly influenced their occupational choice, while the girls indicated their mothers had been very influential. These responses were quite typical of responses reported by many researchers. They reflect the perceptions of the students that parents are a major influence on occupational choice. The proportion of 11th graders who indicated various persons were very influential were as follows:

Very Influential on Occupational Choice	Boys (N=1637) %	Girls (N=1495) %
Mother	28	46
Father	47	27
Grandparents	4	5
Older Brothers & Sisters	16	16
Teachers	23	26
Counselors	14	14
Fellow students	12	18
Others	20	23

If the parental influences are relatively great regarding occupational choices, and if the parents have much more limited knowledge about occupations (see previous comments on page 28), then obviously the persons concerned with planning and implementing area vocational

education programs should consider ways and means of having an impact on both students and their parents (and others in the community).

Sometimes we might assume that all parents have discussed occupations with their children. This probably would be a false assumption, if the responses of the parents in this study tend to be typical for parents of 11th graders in rural areas. However, most (85%) of the parents indicated they had discussed occupations with their 11th graders. In addition, about four out of every five parents indicated the school should provide more occupational counseling, and three out of every five parents indicated the school should have a placement service for students after their graduation.

Aspirations for Education

About one out of every four 11th graders indicated they either preferred not to attend a vocational-technical school after graduation or wanted to attend a four-year college. However, about seven out of every ten expressed a desire to enroll in a vocational-technical curriculum after graduation. The curriculum areas most frequently checked by the boys and girls were as follows:

Boys (N=1586):	Skilled trades	28%
	Draftsmen & Industrial tech.	17%
	Agriculture	11%
Girls (N=1434):	Secretarial/Office/Bookkeeping	31%
	Nursing	18%
	Sales/Marketing	3%

The questionnaire for 11th graders in only one of the five areas gave the students an opportunity to express their opinions regarding interest in enrolling in vocational courses, if available, in the 11th-12th grades. Much interest was indicated by the students; in fact, the interest was such that an obvious deficiency was present in the school program, from the point of view of the 11th graders (7).

Most of the 11th grade students who indicated their first choice occupations were "skilled and technical occupations," also indicated interest in vocational/technical curricula in their geographical area after graduation from high school. For example, 78 percent of the 212 students who indicated their first choice occupation in the field of agriculture, reported interest in some vocational/technical curriculum after graduation from high school. These and other data are presented in Figure 2. The smaller proportion of students interested in vocational/technical curricula from among those with aspirations to be "teachers, engineers and other professional workers (n.e.c.)," probably reflects their desire to enroll in a four-year baccalaureate degree program.

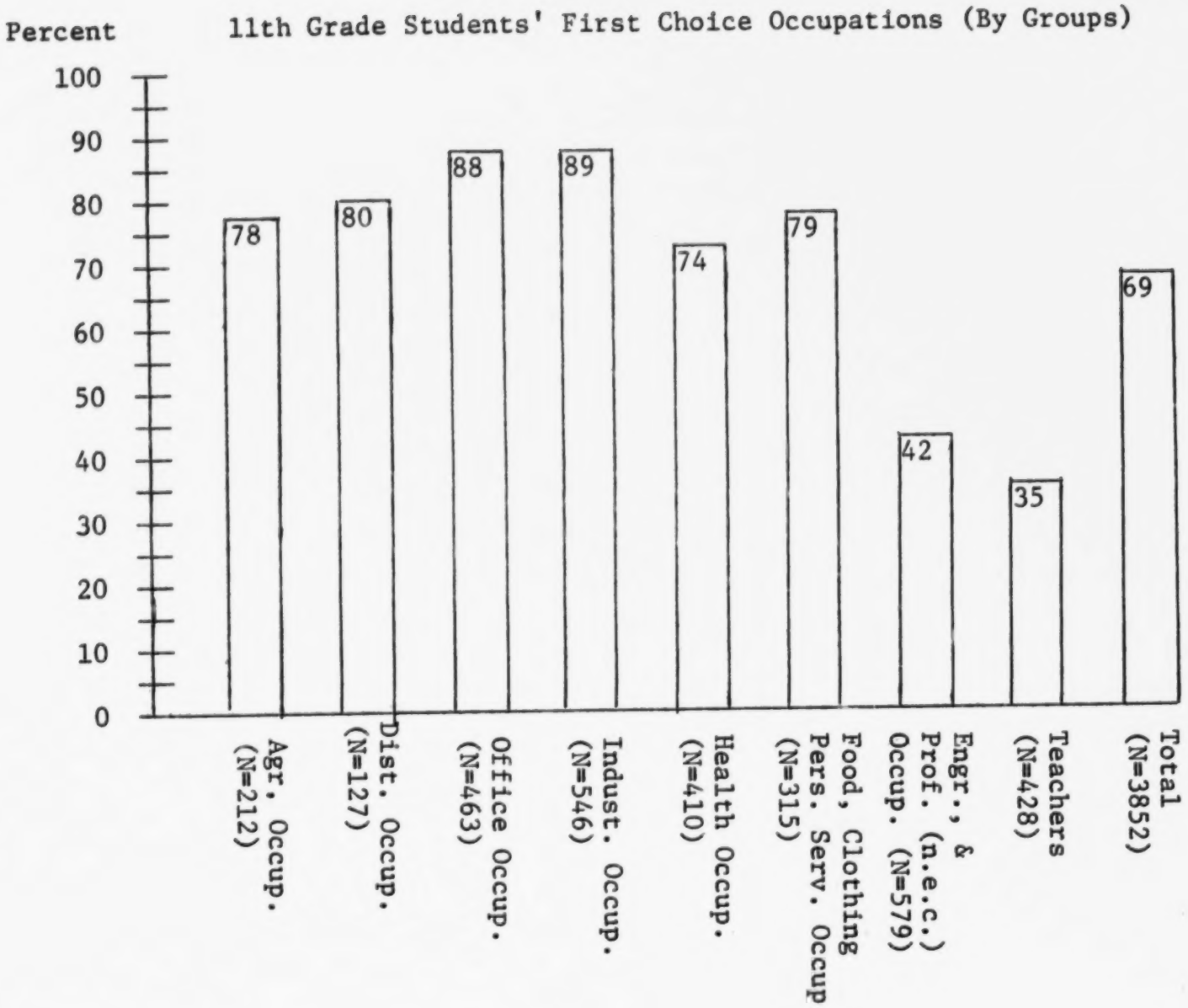


Figure 2

Percent of 11th Grade Students Interested in Vocational-Technical Education After High School Graduation

Most of the 11th graders (75%) indicated they would be willing to work part-time and summer to earn tuition and expenses for attending a vocational/technical school. About two out of every five of the 11th graders reported they could commute up to 25-40 miles to attend such a school, while an equal number indicated they "didn't know" whether or not they could commute that distance.

The aspirations of the parents for education for their 11th graders was measured through several kinds of questions:

1. Opinions regarding enrollment of their child in various vocational courses at the 11th grade level,

2. Ability of the parents to support a son or daughter in a vocational/technical institute giving one or two years of post-high school education,

3. Parents' perception of the ability of their 11th grader to take further education/training,

4. What type of program should their high school provide,

5. Would they be willing to vote for additional levies (assuming a tax increase of no more than 5 percent) to support an expanded and improved vocational/technical education program with free or low tuition.

Frequently, the idea is expressed that parents may be in favor of vocational education, but only for someone else's child. In this study the parents were asked, "If the following areas were available in the 11th-12th grade to give vocational education, in which of them would you like to have your child enroll?" The percent of "yes" responses to the areas listed on the questionnaire were as follows (N=2351):

Business (including office occupations)	42%
Trade and Industrial	37%
Sales, Marketing, Retailing	17%
Home Economics	16%
Forestry, Conservation, Farming, other Agricultural	12%
None of these -- want him/her to have general college preparatory only	25%

Obviously, some of the parents would like to have their children enroll in some courses designed to prepare them for the world of work. Only one of every four indicated they did not want their child to enroll in any of the vocational courses, but instead, wanted him to have only a general college preparatory program.

In another question the parents were asked to indicate (one or more) the kind of program they believed their high school should provide. The percent of the parents responding "yes" were as follows:

A general academic program	9%
A general academic program with some training for employment	54%
A general education with a program to provide vocational competency	39%
A college preparatory program	51%

When the respondents to this question were classified according to the size of their present high school (enrollment in grades 9-12: 700 or more, 400-699, and less than 400), there was practically no difference from the total in the proportion responding to each type program. In other words the parents tended to hold essentially the same opinions regardless of the size of the school in their district.

Two of the factors which may be associated with the attitude of the parents toward education for their child are (a) the perceived ability of their child to complete additional education/training and (b) the extent to which the parents feel they can support their child for post-high school education. Although the categories of choice provided on the questionnaires were imprecise and not definitive, the responses by the parents suggest some areas of concern and action by those planning and implementing area vocational education programs.

A rather crude measure of parent perception of their child's ability was achieved through the use of a question which offered four alternative responses. The question and parent responses were as follows:

"Do you think your child has the ability to take further educational training? (Check <u>one</u> level only)"

I think my child has the ability to:	Percent (N=2351)
...take further training -- business school, technical or trade school	35
..complete junior or community college	13
.. take a four-year college program	40
Don't know	9

Most of the parents perceived their children to have the ability to take further educational training. However there was considerable difference in the extent to which the parents anticipated being able to support their son or daughter for post-high school education in a vocational/technical institute, as shown below:

	Percent (N=2351)
Would not be able to help	9
Would be able if he lives at home	33
Partial support	43
Completely support him	14

When the responses to these two questions were considered together there were some very interesting findings. For example, more than four out of every ten parents who said they could provide no financial help for post-high school education indicated their child had the ability to complete business school, technical or trade school; whereas about one out of every five of the parents who reported they could provide complete support indicated their child could complete business school, technical or trade school. These and other data are shown in Figure 3.

It appears that both the parents with economic ability to completely support their child's post-high school education and those with very limited economic ability may need more information about their child's ability and occupational opportunities. In addition, the potential of the community colleges as a site for post-high school education does not seem to be understood by the parents, or perhaps the community college programs are perceived as being very limited.

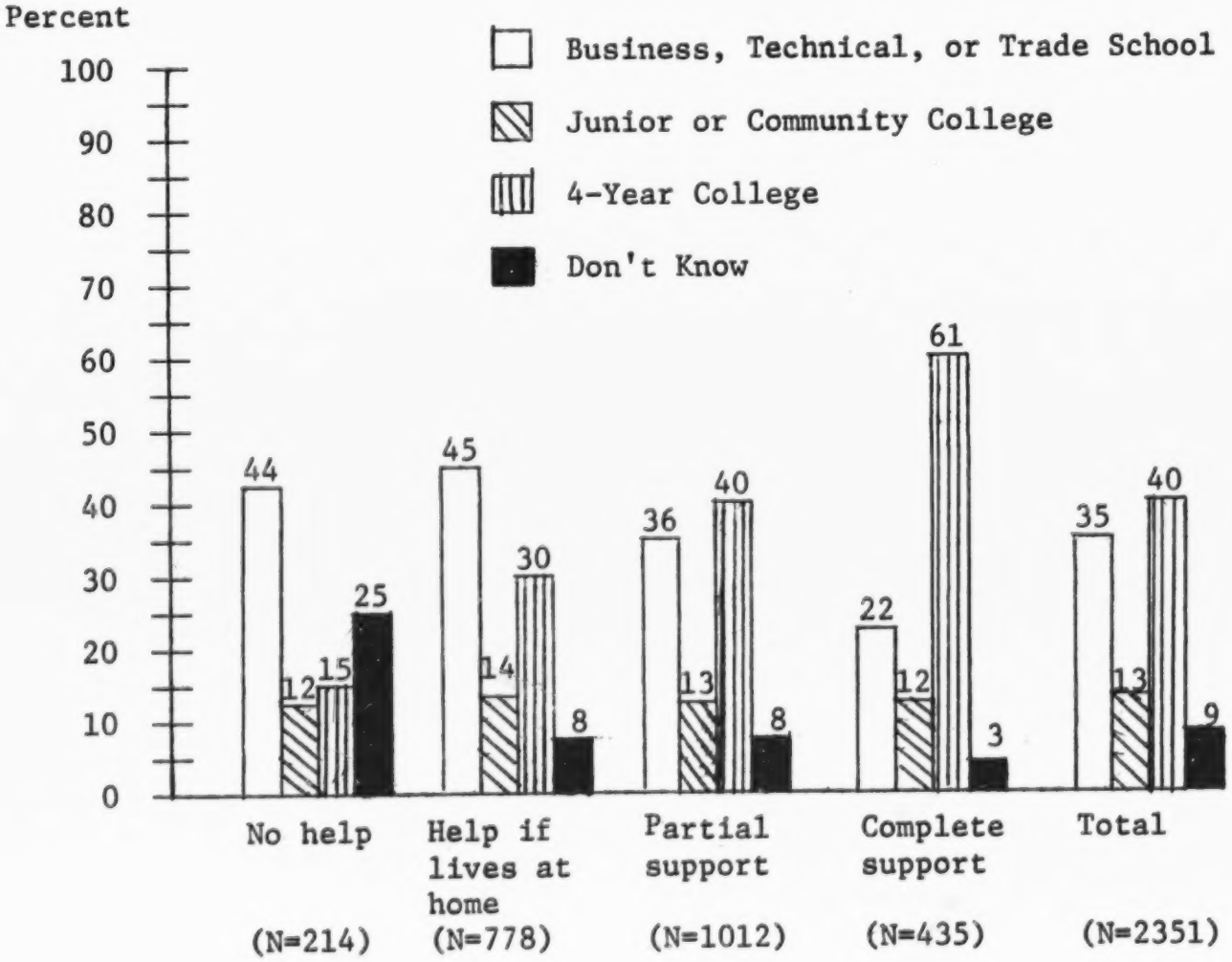


Figure 3

Opinions of Parents About Financial Support to Their Children and Ability of Their Children to Undertake Education Beyond High School

One other measure of parental aspirations for education of their children was attempted. This was a measure of their willingness to vote for additional taxes to support an expanded and improved vocational/technical education program (tuition free or quite low) assuming a tax increase of no more than five percent of what they were currently paying. About 38 percent of the parents replied "yes," 18 percent replied "no," and 40 percent checked "don't know at this point." Most of the parents were in the two categories "no" and "don't know at this point." However, the largest proportion of "no" responses came from parents living in school districts with a 9-12 enrollment of less than 400, as shown below:

9-12 Enrollment	Percent Responding		
	Yes	No	Don't Know
700 or more (N=793)	46	9	41
400-699 (N-541)	40	15	40
Less than 400 (N=1017)	31	26	39

In addition, the parents who desired to have their child enroll in no vocational course were much more likely to respond "no" than the parents who wanted their child to enroll in a vocational course. One out of every five of the parents who wanted their children to have a general college preparatory program instead of any vocational courses in high school also indicated they would vote "no" regarding additional taxes. However, approximately one out of every ten parents who wanted their children to enroll in agricultural courses reported they would vote "no." For both groups approximately two out of every five checked "don't know." Obviously much additional information would need to be provided to the parents, and probably to the entire constituency in the proposed school service area regarding programs, costs, benefits, alternatives, etc.

SUMMARY

The concept of sharing vocational education programs among two or more school districts is not new. One of the important sets of factors to consider when planning such a program are the aspirations of the youth and their parents for education and occupations. The perceptions of both the parents and the youth regarding the nature of occupations and the requirements for entry will undoubtedly be reflected, in part, in the nature of the aspirations. Parents and other members of the family are considered by the youth as being very influential in occupational choice. Therefore one of the apparent prerequisites to success in planning for area vocational education programs is to have both the youth and their parents (and others in the community) aware of the occupations and trends in occupations both within and without the community.

A relatively simple instrument may be used to ascertain some of the characteristics of the aspirations for education and occupations held by 11th graders and their parents. These findings then may be used to help plan the nature and direction of other efforts necessary for development of area vocational education programs.

The resources (dollars, transportation, number of students, present facilities, etc.) available in the various communities are not the same. The feasibility for various educational programs is not the same in all of the communities. Knowledge of parental attitudes and opinions regarding vocational education and kinds of programs perceived to be appropriate to be provided by the high school should be helpful for planning area vocational education programs.

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MICHIGAN STATE UNIVERSITY EAST LANSING

COLLEGE OF EDUCATION

February 24, 1966

Dear Sir:

A significant part of our study of the need and feasibility for vocational/technical education in Lapeer County is a measurement of the occupational interests of students and their parents. We are asking your help in administering a survey instrument in your school.

The package of materials you have been given contains: (1) one copy of an interest inventory for each 11th grader in your school and (2) one copy of a somewhat similar instrument for the parents of each 11th grader. We have chosen the 11th grader since evidence indicates that occupational interest has sufficiently crystallized at that grade to be meaningful, yet the student is not yet faced with the imminence of graduation.

In administering the instruments, you are asked to follow these steps within the limits of your own school schedule:

1. Administer the inventory to 11th graders who are present in school on a given day. Do this by asking the homeroom teacher to administer the instrument (or use any period in the day when all 11th graders will be covered.) The person who administers the inventory should say only, "Our school is cooperating in a study in our county to determine whether additional vocational/technical education should be provided. Give honest answers on your questionnaire -- your name is not to be put on the paper. Hand the papers to (name of a chosen student) who will put them in this envelope and seal the envelope to be sent back to the experts making the study."

Ask the person administering the inventory to give the students as much time as they need.

2. Administer the parent inventory using the same period of time as in step #1. When all students have finished the inventory which they complete, the teacher should pass out one copy of the parent inventory to each student saying something like the following: "Here is a questionnaire which the research group would like your parents to fill out this evening. Please return the inventory tomorrow without fail -- tell your parents how important this is to the future of every son or daughter in our county." Directions to the parents are included on the questionnaire. If all questionnaires are not returned the first day, ask the students again to return them. However, do not wait more than three days to return the questionnaires no matter how many are missing. Any questionnaires brought in after the three day limit should be forwarded within one week.

The student and parent questionnaires are to be returned to Mr. Edward J. Lynch, Superintendent of Lapeer County Intermediate School District, who will forward the materials to us. Your promptness will help us in meeting our contract deadline for the final report. After we have analyzed the questionnaires, they will be returned to you for whatever use you and your faculty wish to make of them.

Please be assured that we very much appreciate your cooperation and your interest in improving education.

Sincerely yours,

O. Donald Meaders

O. Donald Meaders
Associate Director Lapeer County Study Project
Michigan State University

P.S. If you have any questions about the procedures of this part of the study, call our local coordinator, Mr. Edward J. Lynch (664-6642) or me at 332-6922 (collect) in East Lansing.

LAPEER COUNTY AREA VOCATIONAL STUDY

STUDENT QUESTIONNAIRE

Column

(1) (Your answers are confidential -- your teacher will not see them. Hand your paper to the student designated by the teacher to collect them.)

(2-3) 1. Name of High School: _____

(4) 2. Sex: 1) _____Male 2) _____Female

3. Father's Occupation:

(5) What does he do? _____

(6) Where is he employed? _____
(Name of Employer) (Address: City & County)

(7) 4. Mother employed? 1. No _____ 2. Yes _____

(8) If yes, what does she do? _____

(9) Where is she employed? _____
(Name of Employer) (Address: City & County)

5. Parents' educational background: Check ONE of the following for each parent.

Mother (10)	Father (11)		
_____	_____	1.	Not a high school graduate
_____	_____	2.	Graduated from high school
_____	_____	3.	Business school or trade school
_____	_____	4.	Some college
_____	_____	5.	Graduated from college
_____	_____	6.	Do not know how much education

(12-13) 6. Number of children in the family _____ at home.

7. What do you want to do for your life's work -- vocation or occupation?

(14-17) (18) Please name 1st choice _____

(19-22) (23) 2nd choice _____

8. Who do you believe has influenced greatly your occupational choice? (Check one or more)

(24) _____ Mother
(25) _____ Father
(26) _____ Grandparents
(27) _____ Older brothers and sisters
(28) _____ Teachers
(29) _____ Counselors
(30) _____ Fellow Students
(31) _____ Other (What do they do?) _____

STUDENT QUESTIONNAIRE (CONT.)

Column

(32) 9. Which do you think is most important in a job? (Check only ONE)

_____(1) Security
_____(2) High pay
_____(3) Nice working conditions
_____(4) Prestige
_____(5) Chance for advancement
_____(6) Being able to find a job
_____(7) Liking your work
_____(8) Other (list) _____

10. Do you or have you participated in any type of work experience during the summer or after school hours?

(33) _____1. No
_____2. Yes
If yes, answer or check the following:

(34) _____ Regularly after school
(35) _____ Full time during the summer
(36) _____ Occasionally
(37) _____ How many hours a week (Number of hours worked)?
(38) _____ Approximately how much do you earn a week? (Before deductions)
(39-42) _____ What work do you do? _____
(43)

(44-45) 11. If an expanded vocational/technical education program were available in this area after your graduation,

(A) What curriculum would you be interested in: (Check one)

__1. None -- prefer not to attend a vocational/technical school or want to attend a four year college
__2. Agriculture (farming or other Ag occupation including forestry and conservation)
__3. Secretarial/office
__4. Retailing/sales/marketing
__5. Food -- preparation, sales & service
__6. Distributive job such as real estate, hotel-motel
__7. Skilled trade such as auto-mechanic, carpenter, electrician
__8. Technical job such as electronics technician, draftsman
__9. Nursing/health occupations
__10. Bookkeeping/accounting
__11. Other _____

(B) To attend such a school,

(46) 1. Could you commute up to 25-40 miles?
(1) No___; (2) Yes___; (3) Don't know_____.

(47) 2. Would you work part-time and summers to earn your tuition and expenses?
(1) No___; (2) Yes___; (3) Don't know_____.

(48) 12. After you finish high school, do you

__1. Prefer to remain in the Lapeer County area if you can find a job
__2. Want to move to Flint area
__3. Don't know -- it depends on.....(Reason)

YOUR COOPERATION IS GREATLY APPRECIATED

LAPEER COUNTY AREA VOCATIONAL-TECHNICAL EDUCATION STUDY

February 24, 1966

Dear Parents:

Your high school and all others in the Lapeer County area are engaged in a study to determine the desirability of expanding the vocational-technical education available in the area. The study is being conducted under contract with researchers in vocational education of Michigan State University. Funds for the study are being contributed by your school district and the other high schools in Lapeer County.

It is vital to the study to know of your interests in the future occupation of your 11th grade son or daughter. We also need to know about the parents' ability to support their child for education beyond the high school. Your questionnaire need not carry your name -- we will summarize data. In fact, your questionnaire will be placed in a sealed envelope by the school and delivered to us so you cannot be identified in any way.

We would appreciate your cooperation in completing the attached questionnaire to the best of your ability. This information will be used in a professional capacity and will be kept in strict confidence.

It would be appreciated if you would have your son or daughter return the completed questionnaire tomorrow to his high school.

Very truly yours,

O. Donald Meaders

O. Donald Meaders
Associate Project Director
Assistant Professor, Michigan State University

LAPEER COUNTY AREA VOCATIONAL STUDY

PARENT QUESTIONNAIRE

Column
(1)

(2-3) 1. Name of the high school your son or daughter attends _____

(4) 2. Your 11th grade child is: ____Boy ____Girl

3. If the following areas were available in your high school in the 11th-12th grade to give vocational education, in which of them would you like to have your child enroll? (Check one or more)

	No (1)	Yes (2)	Have No Feeling (3)	
				TRADE AND INDUSTRIAL
(5)	___	___	_____	1. Drafting
(6)	___	___	_____	2. Metals -- Machine Operation, Machinist, Sheetmetal etc.
(7)	___	___	_____	3. Power Mechanics
(8)	___	___	_____	4. Building Trades -- Carpentry, Masonry, Plumbing, etc.
(9)	___	___	_____	5. Electricity -- Electrician, Radio & TV Repair, etc.
				DISTRIBUTIVE EDUCATION
(10)	___	___	_____	6. Sales, Marketing, Retailing including on-the-job work
				HOME ECONOMICS
(11)	___	___	_____	7. Homemaking
				AGRICULTURAL EDUCATION
(12)	___	___	_____	8. Farming -- Farm Operator, Farm Manager
(13)	___	___	_____	9. Agricultural Technician -- Soils, Animal Breeding, Building Construction, Landscaping
(14)	___	___	_____	10. Agricultural Professions -- Teaching, Research Extension; Industry and Government
				OFFICE EDUCATION
(15)	___	___	_____	11. Clerical Occupations
(16)	___	___	_____	12. Stenographic Occupations
(17)	___	___	_____	NONE OF THESE -- Want him (or her) to have a general college preparatory program only.

(18-19) 4. Assuming your son or daughter had the aptitude and capacity, and that any education necessary could be financed, which occupation would you like to see your child follow? _____

5. Do you anticipate being able to support your son or daughter in a vocational technical institute giving 1-2 years of post high education?

(20) _____1. Would not be able to help.
(21) _____2. Would be able if he lives at home.
(22) _____3. Partial support.
(23) _____4. Completely support him.

PARENT QUESTIONNAIRE (CONT.)

Column

6. Which do you think is most important in a job? (Check only ONE)

(24) _____1. Security
(25) _____2. High pay
(26) _____3. Nice working conditions
(27) _____4. Prestige
(28) _____5. Being able to find a job locally
(29) _____6. Opportunity for advancement

7. Occupational Guidance Counseling

	No (1)	Yes (2)	
(30)	____	____	1. Have you discussed occupations with your child?
(31)	____	____	2. Do you think the school should have a placement service upon graduation?
(32)	____	____	3. Should the school provide more occupational counseling?

(33) 8. Do you think your child has the ability to take further educational training? (Check ONE level only)

_____1. I think my child has the ability to take further training -- business school, technical or trade school.
_____2. I think my child has the ability to complete junior or community college.
_____3. I think my child has the ability to take a four-year college program.
_____4. Don't know.

9. What do you believe your high school program should provide? (Check one or more)

(34) _____1. A general academic program
(35) _____2. A general academic program with some training for employment.
(36) _____3. A general education with a program to provide vocational competency.
(37) _____4. A college preparatory program.

10. (Optional Question)

If an expanded and improved vocational-technical education program were to be developed, would you vote for additional levies to support it if tuition were free or quite low?

1. Would vote no_____.
2. Would vote yes_____.
3. Don't know at this point_____.

11. If you have comments, please write them below:

YOUR COOPERATION IS GREATLY APPRECIATED

MANPOWER DEMAND FACTORS FOR DEVELOPMENT OF VOCATIONAL EDUCATION PROGRAMS (THE BATTELLE STUDY)*

INTRODUCTION

I would like to explore with you some of the elements of the Michigan Manpower Study being conducted by Battelle. This study is currently in its second phase.

Phase one, which was completed in May 1965, contained a series of reports on the completion of that particular phase, produced three working papers and a final report.** The first paper is entitled, "Characteristics of Michigan's Labor Force in the Next 15 Years." This is a description of the overall program. Another is entitled, "Employment in Selected Occupations in the United States -- 1900-1960." This paper presents pertinent background data. It is a reworking of census data -- the first time such data have been compiled in a consistent form. The third paper is, "Population-Labor Force Projections for Michigan," a summary report which outlines some of the basic demographic characteristics of Michigan's labor force. In addition, our 108-page final report describes the employment projections in about 32 detailed occupational categories for the state.

During the second phase of our study, we shall expand the study to cover about 55 occupations and to include projections through 1980 for the Detroit area as well as for the state as a whole. With that background and with the recognition that much detailed information is now available in published form, I'd like to trace through with you some of the broader aspects of our research program.

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* From an address by Mr. Joseph W. Duncan, Director, Michigan Manpower Study, Battelle Memorial Institute, Columbus, Ohio, delivered during the Workshop on Shared-Time Vocational Education Programs July 20, 1966, at Michigan State University, East Lansing, Michigan.

** Published by the Michigan Department of Economic Expansion, Lansing, Michigan. (The final report is now available from the Michigan Employment Security Commission. Requests should specify Battelle's report on "The Michigan Manpower Study," published November, 1966.)

AGENCIES INVOLVED

The Michigan Manpower Study is a broadly based research program in that it involves three (3) state institutions or agencies.

The Michigan Employment Security Commission took the lead in organizing this study, in recognition that it is the state's focal point as labor analyst. The Vocational Education Act of 1963 specified that the state employment service should provide estimates of future labor force requirements for educational planning. To fulfill this need, the Commission began looking for research techniques and approaches that would lead to an understanding of what the future labor force will be like, so that educational planners will be in a position to develop appropriate programs.

The State Department of Education became involved because it comprises the people who do much of the educational planning. The Department has the task of determining the kinds of educational systems the State of Michigan should have. Within the Department of Education, we have been working specifically with the Division of Vocational Education.

The Department of Economic Expansion became involved through its major state economic planning program. Today, in economic circles, it is quite in order to think of economic plans in terms of not only the natural-resource base but also the human-resource base. And for that reason most progressive state plans today include some consideration of human-resource development.

Battelle Memorial Institute became involved as a result of its experience over the past five years in the development of a research model for studying the labor force as part of economic growth. Also of major significance is the fact that Battelle's staff (numbering over 5,000 people in Europe and the U.S.) are involved in almost every area of new technology that you can name. Thus, Battelle is in position to identify where and how technological changes are likely to affect the kinds of skills that will be required in the future.

The Michigan Manpower Study has been designed to analyze the time period 1965-1980 and to look at two geographic areas -- the state of Michigan as a whole, and the Detroit Standard Metropolitan Statistical Area (Wayne, Oakland, and Macomb counties) which accounts for about 50 percent of employment in the state.

OBJECTIVES AND GOALS

The goals of our project are really threefold, and depending upon which one of the state agencies we are working with, the goals vary in emphasis to some degree. From the standpoint of the Michigan Employment Security Commission (MESC), the primary objective and goal of our study is to develop methodology for labor force forecasting. The MESC will then use the methods to provide a continual updating of information as new facts become available. So we want to develop methodology to provide the initial results for analysis and to provide a model structure for making revisions as new data becomes available.

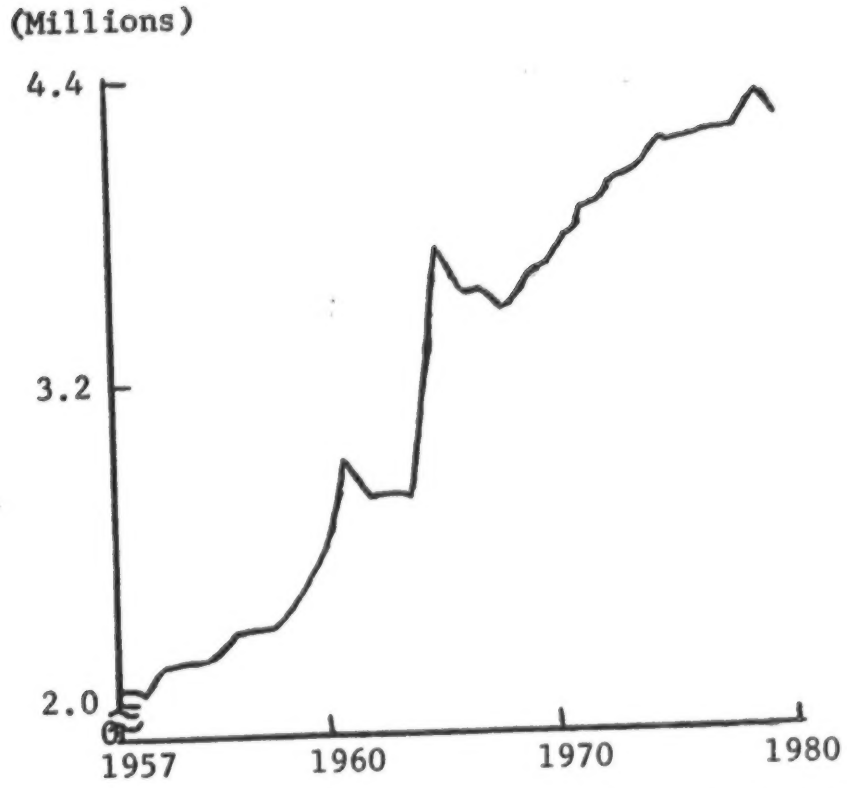
But developing methodology is not enough from a standpoint of vocational planning. The study and resulting model are designed to describe in some detail the labor force characteristics of today and the future. By comparing today with the future, it will be possible to set priorities as to the research areas in which we need more information and particularly where imbalance exists within the labor force. The labor force estimates also permit one to evaluate current changes to determine whether they are of long-term or short-term significance.

Then, of course, from the standpoint of educational planning, the nature of tomorrow's labor force and the nature of today's supply of labor, when compared, permit us to see what gaps are ahead in a vocational education sense and to provide some direction for the broad structure of educational planning.

Parenthetically, I would like to emphasize that, while we speak in terms of the role of education in providing skills for the labor force, it should be recognized that this is only the focal point of our activities. We acknowledge that education has many other roles and that vocational preparation is not the only or necessarily even the primary purpose of education.

We are concerned with educational planning because of the tremendous flow of young people now entering our labor force. During 1965 there was a 36 percent increase over the previous year in the number of young people reaching the age of 18. The United States is building up from the 1957 level of two million people reaching the age of 18 to 3.6 million in 1965 and 4.4 million (estimated) by the end of 1970. This tremendous flow of young people is literally unprecedented in our society.

The total impact of this flow on the labor force is very significant. For three decades, in which the absolute number in the labor force remained approximately constant, the percentage of gain for the young adult sector of our labor force ranged between 1 and 4 percent. (See figure 1). In other words, our society and our economic system adapted

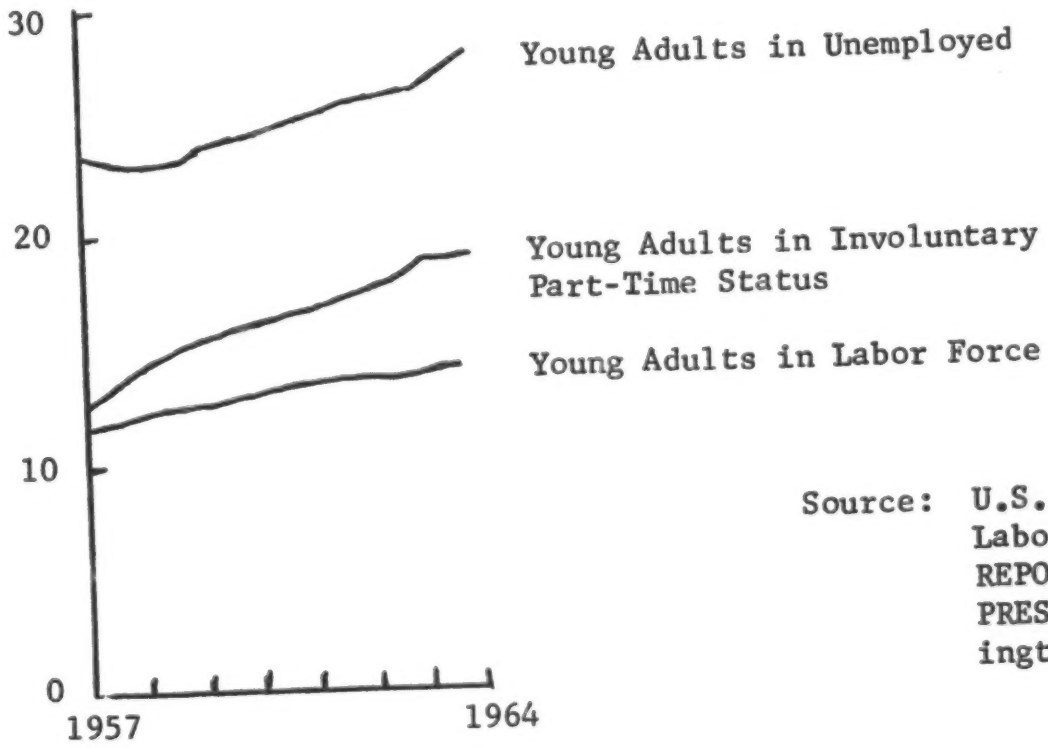


Excludes Hawaii before 1960, Alaska before 1959

FIGURE 1

NUMBER OF PERSONS REACHING AGE 18 ANNUALLY

Source: U.S. Department of Commerce, Bureau of the Census, CURRENT POPULATION REPORTS, Series P-25, 1951-60, No. 265, Table C, Page 3, May 1963; 1961-80, No. 286, Table 7, Page 54, July 1964



Source: U.S. Department of Labor, MANPOWER REPORT OF THE PRESIDENT, (Washington: GPO, 1964)

FIGURE 2

18-24 YEAR OLDS IN THE LABOR FORCE

to a situation of a rather modest net inflow of young adults into the labor force. What we are experiencing currently is that over 50 percent of our total labor force growth (1960-1970) will be accounted for by a net inflow of young adult-age people. These young people are, by definition, inexperienced. Many of them lack useful skills. This situation exists at a time when rapid changes in technology are eliminating many of the routine repetitive jobs which have, in the past, represented positions of entry into the labor force. This background highlights our concern for providing an adequate education for people about to enter the labor force: unprecedented numbers of people will be (and currently are) flowing into the labor force in the face of an almost unprecedented shortage of entry positions.

Much of the current experience of the business cycle in the 1960's have forced some of these concerns into a background position. The Vietnam buildup has created many jobs in durable and hard goods industries which use a great amount of unskilled labor. We must recognize that this is an abnormal situation, not representative of the long-term trend. Otherwise, we would be experiencing even higher levels of unemployment among our young people today. Furthermore, of the "youth movement" that is going to occur during this decade, 60 percent of it will occur through 1966-1970 In other words, we have had only the beginning of this inflow to date.

PREDICTED ECONOMIC DEVELOPMENTS

In order to approach the question, "What kinds of jobs should we be training young people for?", one needs to have some concept of the future development of our economic system. Battelle began to study the situation in Michigan after analysis of some of the results which we obtained in earlier studies of the national economy. The national study, based upon an investigation of the impact of technology upon the structure of our economic system, in very broad terms, resulted in a hypothesis that there are three basic economic eras in economic evolution, each with fundamentally different characteristics.

First, the Agricultural Era, with which we are all familiar, dated through 1900. During this period, most members of our labor force earned their living on the farm, producing the necessities of life. However, as a result of improved technology in agriculture and primary activities similar to agriculture, we increased the productivity of the individual agricultural worker. The result was that we were able to free people for the production of other goods and services. Furthermore, these productivity increases generated a higher standard of living which permitted people to consume more than the mere basic necessities.

The combination of changing demand and changing availability of labor permitted us to enter the Industrial Era around the turn of the century. Throughout most of this century, we found manufacturing growing into the most dynamic sector of our economy as a source of employment. In fact, through 1955, manufacturing was the most rapid employment growth sector of our total economic system.

However, around 1955 we seem to have satisfied most of the pent-up demands which came out of the depression and war. At the same time we had rebuilt our plant capacity for manufacturing so that productivity levels began to increase very rapidly. The result is that from 1955 until today, manufacturing employment has grown only very slowly. In fact, most of our jobs have been found outside the manufacturing activities. For this reason many people characterize the Post-Manufacturing Era (into which we are currently entering) "the services economy."

Now this term is accurate, of course, but we think there's a more useful way to look into the future economy than to simply call it a services economy. We look at the kinds of jobs that will be available. During the manufacturing and agricultural eras, most of our people earned a living by taking natural resources and developing them into useful products. What we see today as we look at our employment structure is that our growing sources of employment are those which utilize man's unique resource, his brainpower, his creative-adaptive abilities. For this reason, the shift from natural to human-resource development -- as the basic job function -- leads us to characterize the era into which we are now entering as the "human resources" era. With this background you will see some of the changes that are taking place in demands that are particularly significant from the standpoint of planning school systems to include programs of vocational activities.

THE LABOR FORCE PROFILE

In order to understand the labor force of the future, we have developed a model which considers three dimensions of labor force activity: (1) the individual and the industry in which he works; (2) the occupation which he holds within that industry; and (3) the skill level or education which he brings to that activity. This is a very useful conceptualization, because it permits us to look at technological changes in terms of how they will affect the labor force of the future.

We can think of changing technology first in terms of product innovations. These basically change the relative employment opportunities in various industries. For example, Battelle was involved in developing the process of xerography. This brought about a readily accessible,

relatively low-cost method of reproducing documents, perhaps to the extent that we now produce too many copies. Nevertheless, it illustrates a new product that created a new industry. We find ourselves satisfying previously undeveloped and unsatisfied wants and desires for more copies. And this is exactly what other new products do. They permit us to satisfy demands and wants that were previously unsatisfied, or they replace the technique by which we satisfy the wants and demands which we have. The airplane, for example, permits us another alternative for mode of travel. Our basic demand for travel changes, however, and we find that today we schedule meetings in California as frequently as we do in New York, because they're almost equally accessible to the Midwest in terms of flying time.

In summary, the effect of new products is to create growth in certain industries and to take away from the growth in other industries. Thus one must really understand the character of the products that will be available tomorrow, in order to understand the growth potentials of the industries of tomorrow.

The second type of innovation, and this is what we typically hear more about, changes the processes we use to produce the goods and services that we have and that we are demanding in our economic system. The introduction of the computer in the process of producing hot strip metal means that we change the kinds of skills needed to produce steel. We use a computer technologist in the control booth and we use fewer people poking at the strip as it moves down the line of the hot strip mill. The result of the process change can be described in terms of the kinds of skills which are required within that industry to produce that industry's output.

As industrial and occupational changes interact, new demands are placed upon the educational system. This is basically the concern of our study. When we look at Michigan, in addition to changing technology and changing products which will be produced by our economy, we have another basic force that is acting upon the educational system: population growth. And from all indications, it is quite clear that Michigan's population will continue to grow rather impressively. By 1980 Michigan population will approach 10 million people.

The predicted growth pattern throughout the two decades from 1960 to 1980 is quite impressive. More people mean a larger labor force to be trained and absorbed into the economy. And of course the profile mentioned earlier for the United States -- the growth of young people -- is mirrored in the economy of Michigan. The number of workers in the 25-29 year age group will increase over 80 percent between 1960 and 1980, whereas the total labor force will grow about one-third during this period. The middle-aged group that serves as our middle management will barely increase during the next 20-year period, creating some

interesting demand problems as we try to train people to reach management responsibility at an earlier age and as we utilize some of our senior workers in capacities which we might not have used them for had more middle-aged people been available. The growth in the labor force has a very specific age structure which certainly has implications not only for the basic education that flows from high school to post-high school activities, but also has significance in retraining and adult education, which are growing in significance.

When we look at the economy of Michigan, we are basically interested in what is going to happen to manufacturing jobs. Michigan is one of the leading manufacturing states in the nation. The state has a very high commitment to manufacturing industries -- the industries of the Manufacturing Era that we are leaving. This means that Michigan needs to adjust as it develops the industries and the employment activities that will be associated with the new economic structure that the national economy will experience. Of course, we have some evidence of this already, since total manufacturing employment in Michigan has remained relatively stable since the war.

The challenge of the 1970's will be to match this growth in total employment with a stability in manufacturing and a changing skill composition for employees within manufacturing industries. This is really the challenge for which the State's Department of Economic Expansion is currently planning. What kinds of industries can be developed in order to bring the stability in manufacturing employment into line with the growing labor force of 1980 and beyond?

As a result of the State's basic commitment to manufacturing, the kinds of skills required in Michigan's economy are defined very clearly in terms of activities that relate to manufacturing processes. Clearly Michigan has a high commitment to the machine operative in the manufacturing process. When contrasted with the U.S. on the average, the state has a relatively low commitment in white-collar activities. This profile of occupations, in terms of the study Battelle is conducting, is forecast to 1980 by looking at the detailed occupations which make up these broad categories and by looking at each of these occupations within approximately 35 different industries of employment. For example, consider education itself as one of the 35 industries of employment.

OCCUPATION TRENDS

In order to understand some of these trends which are occurring and the significant details, we need to examine some of the differentials that exist among specific occupational categories. Let's consider some

craft occupations.* As you see, from decade to decade the growth of specific craft activities is quite dissimilar. Particularly, if we look at the 1950-1960 decade, we see some counter trends.** The number of carpenters in Michigan declined between 1950 and 1960. Now the implication becomes quite interesting when one looks ahead on the basis of the age structure of the carpenters in the Michigan economy. The number of carpenters who will be retiring will exceed the number of apprentices by 10 to 1, and yet demand for these skills is not going to diminish in nearly that order of magnitude. This illustrates that one must consider the replacement demands as well as the growth of total employment in a specific category Our study does not directly deal with replacement demands as well as the growth of total employment in a specific category. Our study does not directly deal with replacement demands in terms of published data, but we have developed a special census tabulation which permits us to describe the age profile of specific detailed occupations.

A similar pattern exists when we look at professional occupations. We think of professional and related activities as growing sources of employment in our economy. But that does not mean that all professional activities are growing with equal vigor. The pattern throughout the long-time perspective of 1900-1960 is quite diverse. (The rapid growth of the earlier period was influenced by a very small base in the absolute numbers.) The rates of growth, then, of the various specific occupations change as a result of a number of changes in the industry structures that employ these categories. Medicare, for example, will have a quite different effect on demand for nurses than it will have on demand for engineers, whereas the space program, of course, will have a contrary effect.

In addition to examining the detailed occupations within each of the broad categories, our model considers the educational attainment which is associated with these categories. The number of high school graduates in our labor force has been increasing as a result of generally increasing educational attainment for the total population. The role of the high school graduate in the professional-technical activity has changed little, because it is the post-high school educational activity that affects that category. For craftsmen and foremen, the high school education is much more significant. In our analysis we are concerned with the educational attainment that is required by the detailed occupations. The resulting labor-force projections are particularly valuable for educational planning.

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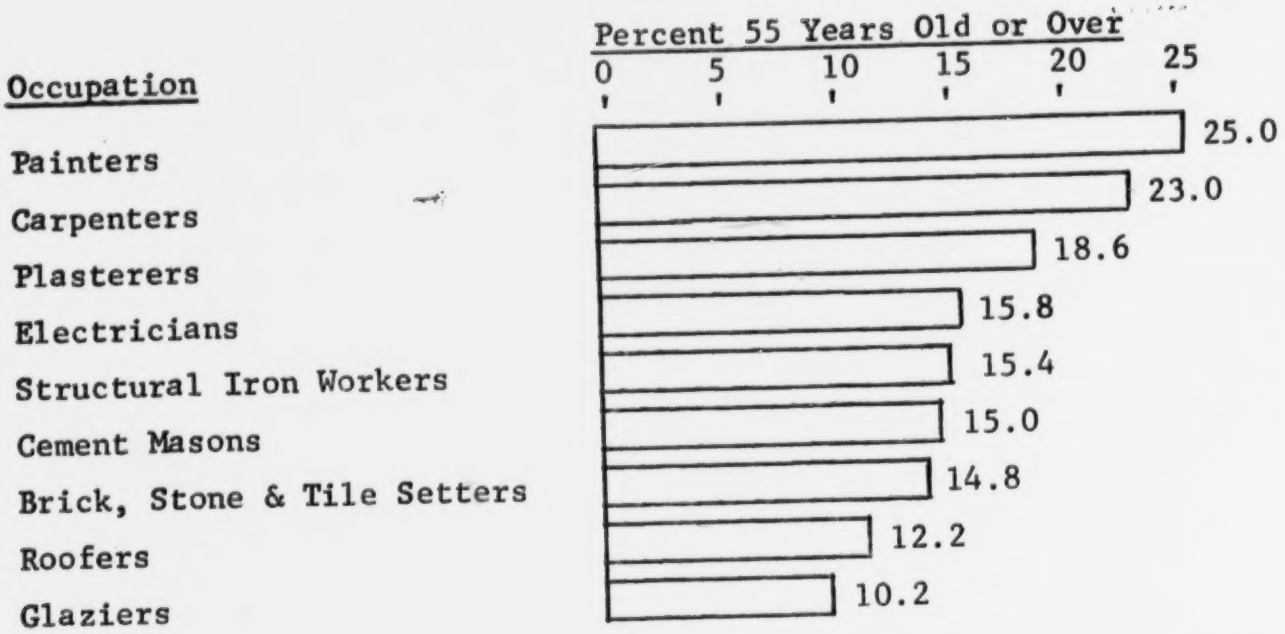
* Figure 3

** See Table 1 -- Apprenticeships



Source: 1960 Census of Population, Vol. II, Subject Reports, Part 7A, OCCUPATIONAL CHARACTERISTICS, Table 4.

Figure 3

Percent of the Male Experienced Civilian Labor Force 55 Years or Older, by Occupation, United States 1960

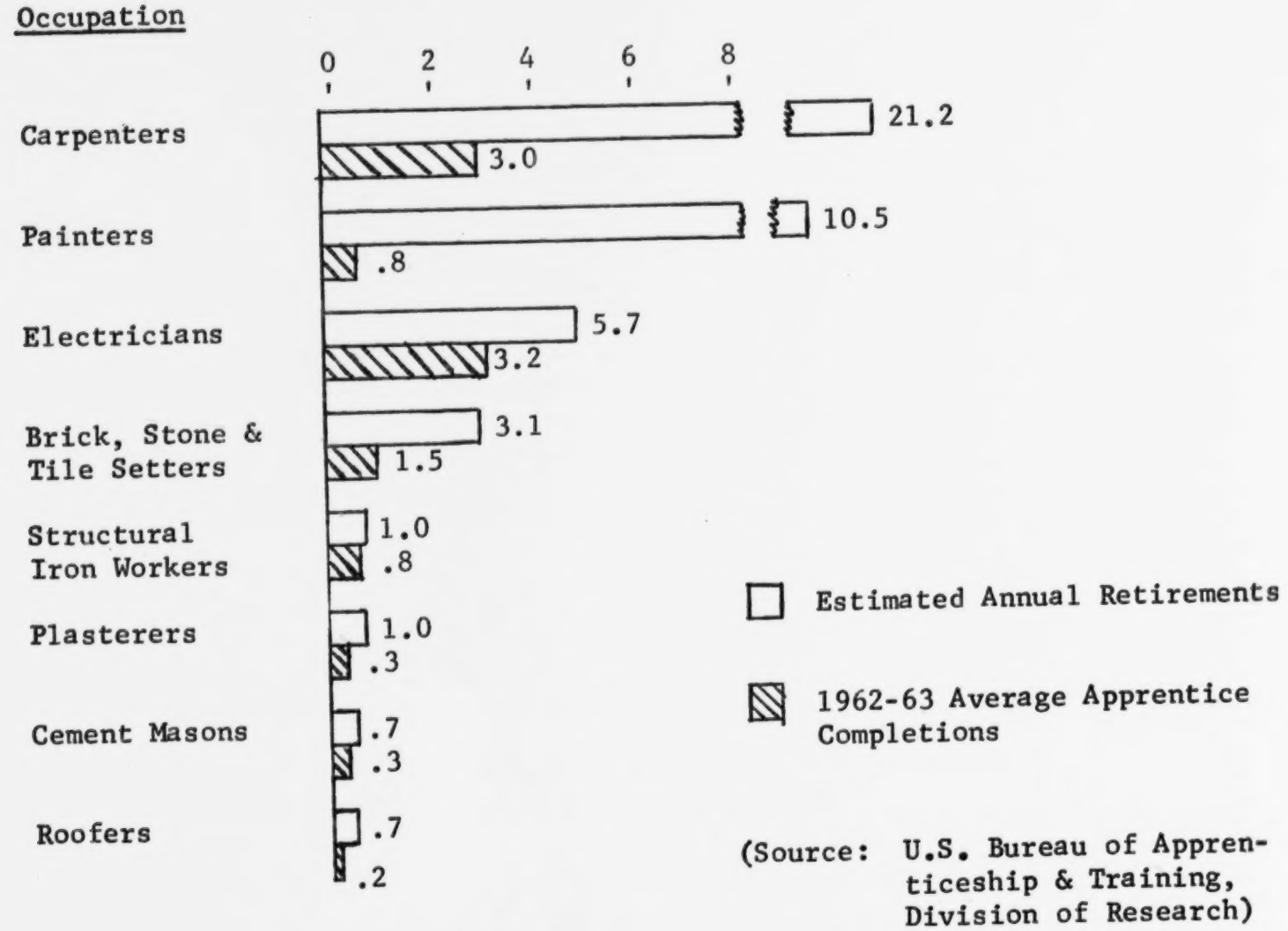


Figure 4

Estimated Retirements from and Completions of Training for Selected Apprenticed Occupations

TABLE 1

APPRENTICESHIPS COMPLETIONS AND REGISTRATIONS IN SELECTED CONSTRUCTION TRADES, 1962 AND 1963

Occupation	Completions		Active Registered Apprentices		Net Change	
	1962	1963	1962	1963	1961-62	1962-63
Brick, stone, and tile setters	1,527	1,484	8,607	8,710	+144	+103
Carpenters	2,986	3,013	22,073	23,118	+216	+1,045
Cement Masons	327	312	1,478	1,637	+204	+159
Electricians	3,279	3,148	19,532	20,293	+960	+671
Glaziers	202	201	1,023	1,069	+43	+46
Lathers	387	216	1,718	2,093	+166	+375
Painters	790	895	5,597	6,031	+297	+434
Plasterers	290	338	1,407	1,428	+188	+21
Plumbers and Pipefitters	3,409	2,924	20,457	20,764	+22	+307
Roofers	288	197	2,259	2,619	+205	+360
Sheet Metal Workers	1,749	1,558	9,899	10,052	-41	+153
Structural Iron Workers	896	773	4,895	4,820	+151	-75

Source: U.S. Bureau of Apprenticeship and Training, Division of Research
MANPOWER REPORT OF THE PRESIDENT, March 1965, Table F-7, page 255.

In broad terms, what we see happening in the labor force as a result of the Human Resources Era is more than a continuation of a trend that has existed for some time. It is, rather, an acceleration. In 1947, there were about 1.2 blue-collar workers for each white-collar worker in the labor force. By 1964, this ratio had reversed itself. In a very short time -- little more than a decade -- we will reach the point where there are two white-collar workers for each blue-collar worker. This changes the entire complexion of the labor force.

SUMMARY

What we see happening is a fundamental change in the character of our labor force, not only nationally, but more specifically here in Michigan. I am not sure exactly how one would summarize all the aptitudes of our total population. But at least conceptually we can think of an aptitude index which ranks the total population by some means or other. Certainly most people would agree that if we look at the total population in terms of various aptitudes, we probably would have a normal distribution with most of the people having an average level of aptitude -- aptitude here including intelligence, dexterity, and a number of other qualities and attributes, and with limited numbers of people with very low or very high aptitude.

Back in the 1900's, when agricultural and manufacturing activities were predominantly categorized as working with the hands and natural resources, the aptitude requirement of the total labor force was certainly much less than the available aptitudes of the total population. A smaller proportion of the high-school-age population was in high school as the relationship between what people learned in school and what they did on the job was vague, to say the least. Education primarily focused on activities other than providing a course in skills. If you accept the projections that we have developed in terms of the kinds of skills which will be required, the types of industries which will exist, and the levels of education which will be associated with those jobs, we see coming upon us in the 1980's a situation in which the aptitude requirement of the labor force is going to very closely approximate the natural aptitude profile of the total population.

This means, then, that the extent to which we fail to develop people's aptitudes, we will experience increasing difficulties to fill positions in the labor force. Let me say it another way. If we have somebody with a high potential level of aptitude whose aptitudes are not developed, he will be employed in an activity which requires lower aptitude. This means that he displaces somebody who may have developed to the maximum a lower potential aptitude. This pattern

creates somewhat of a "domino" effect. Thus, we must be concerned with more than just training the engineers and scientists we are going to need as a solution to the Human Resources Era. We need to be concerned with the total spectrum of skills and aptitudes in occupations. A tighter relationship between people's aptitude potential and the aptitudes that are going to be required of them must develop if they are going to enter the emerging labor force.

I would like to emphasize that I am not talking about a college-educated society. In 1960, if we look at persons 25-29 years of age, 11 percent had earned a college degree. In other words, in 1960, nine out of ten people 25-29 years of age did not have a college degree.

By 1975, we are going to experience a tremendous growth in colleges. And college enrollment during this period will go up 140 percent. Nevertheless, even then less than 20 percent of our population will hold a college degree. The great growth potential is in the post-high school, sub-baccalaureate level. I think the projections would be quite high in this category.

We must think of the future in terms of a spectrum of educational opportunities that relate to a wide variety of skills, aptitudes, and labor force requirements. In order to do this meaningfully, we have to have as much information as we can about the labor force. We at Battelle hope that the Michigan Manpower Study will provide some input to each of you.

DISCUSSION:

QUESTION: Is your definition of labor force the same one that the Labor Department uses?

ANSWER: In general, yes. There are many people in the labor force, but this doesn't mean they are all working. Actually, it is a rather complex definition, because the Labor Department's definition includes people who are actively working as well as those who are actively seeking work. This omits some of those people who have become discouraged because they don't have skills to offer, and are not actively seeking work. Exactly what the labor force is, of course, is a debatable entity. If we think back to World War II, we had a number of women in occupations that we wouldn't normally consider them for today.

QUESTION: Your Manpower Study, as I gather, made no distinction between sexes. I have been hearing recently that there is a possible need to distinguish between men and women in the labor force.

ANSWER: There's no question about the need -- it is a matter of choice of detail that you want to go into. There is much information available once you specify your projected employment pattern. There is, in the printed census material, sex breakdown, and this is changing as we alter our social concepts of employment acceptability of women. I would certainly agree that sex is an important variable. We have not included it except in terms of educational attainment as to age and sex. We do have the employment by occupations detail in terms of sex, however.

QUESTION: Is there something in your findings which would cause an educational administrator to say, "We don't need any more blue-collar workers and we need more of the white collar." and immediately tend to associate this evaluation with college training?

ANSWER: This is the kind of thing that happened after Sputnik. I tried to emphasize that the spectrum of education -- the entire structure of the educational system -- is important. That is why our reports emphasize so much detail in terms of the number and types of occupations, especially blue collar.

QUESTION: To me one of the most significant factors is the need for total education of the individual across the board -- trying to educate everybody to his potential ability. You made brief mention in regard to one person not working up to his fullest ability, thus displacing another. Does your study begin to show signs of this sort of problem?

ANSWER: This certainly is one of the major points. We have in our study a model which looks at both the supply of labor and the demand for labor. The demand for labor is technologically defined. The supply is defined by the educational system according to estimates of what trends are likely in the next 15 years. Educational attainment of the total labor force changes rather slowly as a result of the net flow between death, retirement, and withdrawal in comparison with new entrants and re-entrants. Technology, on the other hand, is changing very rapidly. The result is that, particularly on the post-high school level in terms of skill requirements, we are experiencing many shortages in particular occupations. Some shortages are solved through substitutions, and substitutions occur not by taking the unemployed off the street, but by substituting within the system and by using technicians and other white-collar workers in support-type jobs.

A very complex chain comes out of this practice. What we have done basically in the Michigan Manpower Study is find the magnitudes of the imbalances. The amount doesn't necessarily indicate where substitutions are going to occur, because there are literally in infinite number of possible permutations and combinations. But we have tried to define the kinds of imbalances which are likely, and the resulting needs for educational development.

QUESTION: Should we infer that the shortage of carpenters may lead to uses of different materials, more pre-form, prefabricated types of things?

ANSWER: That is right. In economists' terms, skill shortages are reduced very quickly to cost considerations. But the element of social acceptance of the technological solutions is important. This is why we work so closely with our technological specialists in defining the kinds of skills which will be needed for the future. Many activities that are technologically feasible just aren't going to be accepted by industry or the consumer for some time Therefore, you have to look at the rate of diffusion of innovation. And this is really the judgment that is involved in any forecast of the technology of tomorrow.

QUESTION: Mr. Duncan, are you saying that we can only run into this Human Resource Era at a speed commensurate with the rate at which we train aptitude level?

ANSWER: This is certainly an important element of the story. I think it is very evident that our total national economy is going to become, basically, a human-resources-oriented economy with a large sector of employment providing professional and semi-professional skills, many of them in urban centers. Now the extent to which the Michigan economy succeeds in competing with the national economy depends in part on its ability to develop and attract human resources.

QUESTION: Will the study indicate the over-employment of the persons who develop their aptitudes more nearly to the demand? I am quite concerned about the amount of work that is being piled upon professional people in education, engineering, and the highly skilled trades and managerial positions. While some people are underemployed, we have people literally killing themselves because there is work to be done but not enough qualified persons to step in and take over.

ANSWER: I didn't talk about this aspect of our study, but we have, in our economic projections, gone into the question of leisure time. Leisure time is very misleading, as you know. With the move toward white-collar activities, those people involved are mostly salaried people, as opposed to hourly rated As people become involved in professional activities, part of that involvement brings with it the reading of technical journals, the reading of literature, the introduction of problems with which they previously hadn't been concerned and a need to continually update themselves, which are characteristic of almost all white-collar activities.

The result, then, is that the amount of leisure time in the next decade or so will be minor, for many persons, as a result of these shortages. In fact, our estimate of the average work week in 1980 is just two hours less than what we are experiencing today.

SUMMARY*

The shared-time concept for expanding and improving vocational education depends primarily on the joint, cooperative efforts of people in two or more school units. The image of vocational education held by people in the communities and their perceptions of its importance to youth, to the business-industry world, and to the nation are vital to the eventual development of a program of instruction.

The decisions regarding financing, staffing, and providing facilities depend upon attitudes and beliefs of people at local, state and national levels. However, in the present structure for education in Michigan, the beliefs of people in the communities involved, and of their legislative representatives appear to be quite basic to policy development for use of the shared-time concept.

Persons involved in attempting to plan for area vocational education programs, whether the proposed programs involve community colleges and/or non-public schools, must consider the present images of vocational education, values placed on vocational education, aspirations of both students and parents for occupations and education, the nature and trends in the jobs within the world of work, the resources available to and in the communities, and the decision-making process. There appears to be no short-cuts to effective assessments of situations, involvement of people, and development of plans based on understanding of alternatives.

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